

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: JOHN CHU Examiner #: 68314 Date: 3-4-05
Art Unit: 1752 Phone Number ~~30~~ 272-1329 Serial Number: 10/653,242
Mail Box and Bldg/Room Location: 9051 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): _____

Earliest Priority Filing Date: _____

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

PLEASE SEE ATTACHED.

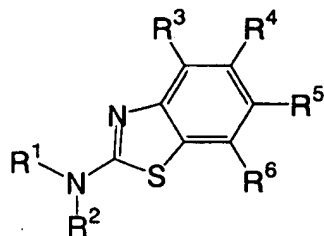
STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
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Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr.Link _____
Date Completed: <u>3-10-05</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: _____	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: _____	Other _____	Other (specify) _____

WHAT IS CLAIMED IS:

1. A diazonium salt represented by the following general formula (1):

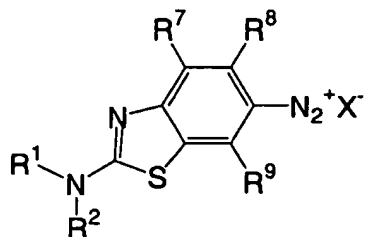
General formula (1)



wherein R¹ and R² each independently represents an alkyl group, an aryl group, an acyl group, an alkoxycarbonyl group or a carbamoyl group, and R¹ and R² may be linked each other to form a ring; and R³, R⁴, R⁵ and R⁶ each independently represents a hydrogen atom, a hydroxyl group, a halogen atom, an alkyl group, an aryl group, an alkoxy group, an aryloxy group, an alkylthio group, an arylthio group, an alkylsulfonyl group, an arylsulfonyl group or a diazonio group, and at least one of R³, R⁴, R⁵ and R⁶ represents the diazonio group.

2. The diazonium salt according to claim 1, and represented by the following general formula (2):

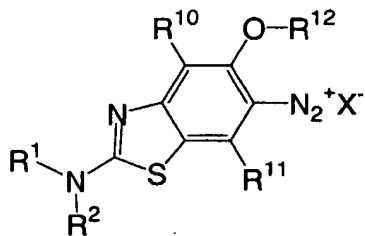
General formula (2)



wherein R¹ and R² each independently represents an alkyl group, an aryl group, an acyl group, an alkoxycarbonyl group or a carbamoyl group, and R¹ and R² may be linked each other to form a ring; R⁷, R⁸ and R⁹ each independently represents a hydrogen atom, a hydroxyl group, a halogen atom, an alkyl group, an aryl group, an alkoxy group, an aryloxy group, an alkylthio group, an arylthio group, an alkylsulfonyl group or an arylsulfonyl group; and X⁻ represents an anion.

3. The diazonium salt according to claim 1, and represented by the following general formula (3):

General formula (3)

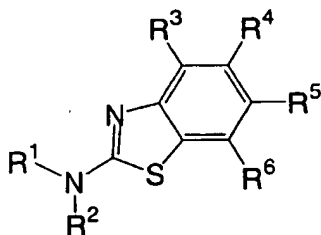


wherein R¹ and R² each independently represents an alkyl group, an aryl group, an acyl group, an alkoxycarbonyl

group or a carbamoyl group, and R^1 and R^2 may be linked each other to form a ring; R^{10} and R^{11} each independently represents a hydrogen atom, a halogen atom, an alkyl group, an aryl group, an alkoxy group, an aryloxy group, an alkylthio group, an arylthio group, an alkylsulfonyl group or an arylsulfonyl group; R^{12} represents a hydrogen atom, an alkyl group or an aryl group; and X^- represents an anion.

4. A thermal recording material comprising, on a support, a thermal recording layer containing a coupler and a diazonium salt represented by the following general formula (1):

General formula (1)

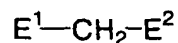


wherein R^1 and R^2 each independently represents an alkyl group, an aryl group, an acyl group, an alkoxycarbonyl group or a carbamoyl group, and R^1 and R^2 may be linked each other to form a ring; and R^3 , R^4 , R^5 and R^6 each independently represents a hydrogen atom, a hydroxyl group, a halogen atom, an alkyl group, an aryl group, an alkoxy group, an aryloxy group, an alkylthio group, an arylthio

group, an alkylsulfonyl group, an arylsulfonyl group or a diazonio group, and at least one of R³, R⁴, R⁵ and R⁶ represents the diazonio group.

5. The thermal recording material according to claim 4, wherein the coupler is a compound represented by the following general formula (4) or a tautomer thereof:

General formula (4)



wherein E¹ and E² each independently represents an electron withdrawing group, and E¹ and E² may be linked each other to form a ring.

6. The thermal recording material according to claim 4, wherein the diazonium salt is encapsuled in microcapsules.

7. The thermal recording material according to claim 6, wherein walls of the microcapsules include at least one of polyurethane and polyurea as a constituent.

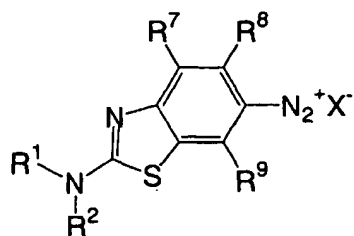
8. The thermal recording material according to claim 4, wherein the thermal recording layer includes an organic base.

9. The thermal recording material according to claim 8, wherein the organic base is used in an amount of 0.1 to 30 parts by weigh with respect to 1 part by mass of the diazonium salt.

10. The thermal recording material according to claim 4, wherein the thermal recording layer includes a color forming aid.
11. The thermal recording material according to claim 4, wherein the thermal recording layer includes a free radical generating agent.
12. The thermal recording material according to claim 11, wherein the free radical generating agent is used in an amount of 0.01 to 5 parts by mass with respect to 1 part by mass of the diazonium salt.
13. The thermal recording material according to claim 4, wherein the thermal recording layer includes a vinyl monomer.
14. The thermal recording material according to claim 13, wherein the vinyl monomer is used in an amount of 0.2 to 20 parts by mass with respect to 1 part by mass of the diazonium salt.
15. The thermal recording material according to claim 4, wherein at least one of a light transmittance control layer and a protective layer is disposed on the thermal recording layer.
16. The thermal recording material according to claim 4, wherein the thermal recording layer includes the diazonium salt represented by the general formula (1) in an amount of 0.02 to 5 g/m².

17. The thermal recording material according to claim 4, wherein the diazonium salt is represented by the following general formula (2):

General formula (2)

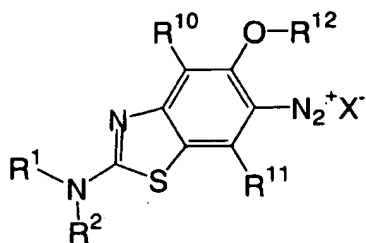


wherein R^1 and R^2 each independently represents an alkyl group, an aryl group, an acyl group, an alkoxy carbonyl group or a carbamoyl group, and R^1 and R^2 may be linked each other to form a ring; R^7 , R^8 and R^9 each independently represents a hydrogen atom, a hydroxyl group, a halogen atom, an alkyl group, an aryl group, an alkoxy group, an aryloxy group, an alkylthio group, an arylthio group, an alkylsulfonyl group or an arylsulfonyl group; and X^- represents an anion.

18. The thermal recording material according to claim 17, wherein the thermal recording layer includes the diazonium salt represented by the general formula (2) in an amount of 0.02 to 5 g/m².

19. The thermal recording material according to claim 4, wherein the diazonium salt is represented by the following general formula (3):

General formula (3)



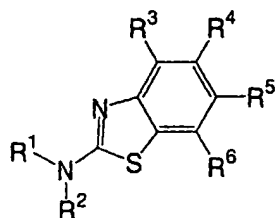
wherein R¹ and R² each independently represents an alkyl group, an aryl group, an acyl group, an alkoxycarbonyl group or a carbamoyl group, and R¹ and R² may be linked each other to form a ring; R¹⁰ and R¹¹ each independently represents a hydrogen atom, a halogen atom, an alkyl group, an aryl group, an alkoxy group, an aryloxy group, an alkylthio group, an arylthio group, an alkylsulfonyl group or an arylsulfonyl group; R¹² represents a hydrogen atom, an alkyl group or an aryl group; and X⁻ represents an anion.

20. A thermal recording material according to claim 19, wherein the thermal recording layer includes the diazonium salt represented by the general formula (3) in an amount of 0.02 to 5 g/m².

ABSTRACT

A diazonium salt represented by the following general formula (1) and a thermal recording material using the diazonium salt:

General formula (1)



wherein R^1 and R^2 each independently represents an alkyl group, an aryl group, an acyl group, an alkoxycarbonyl group or a carbamoyl group, and R^1 and R^2 may be linked each other to form a ring; and R^3 to R^6 each independently represents a hydrogen atom, a hydroxyl group, a halogen atom, an alkyl group, an aryl group, an alkoxy group, an aryloxy group, an alkylthio group, an arylthio group, an alkylsulfonyl group, an arylsulfonyl group or a diazonio group, and at least one of R^3 , R^4 , R^5 and R^6 represents the diazonio group.



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BIBDATASHEET

CONFIRMATION NO. 4732

Bib Data Sheet

SERIAL NUMBER 10/653,242	FILING DATE 09/03/2003 RULE	CLASS 430	GROUP ART UNIT 1752	ATTORNEY DOCKET NO. Q77007	
APPLICANTS Akinori Fujita, Shizuoka-ken, JAPAN; Kimiatsu Nomura, Shizuoka-ken, JAPAN; Yoshihiro Jimbo, Shizuoka-ken, JAPAN; Hisato Nagase, Shizuoka-ken, JAPAN; Toshihide Aoshima, Shizuoka-ken, JAPAN; Yasuhiro Mitamura, Shizuoka-ken, JAPAN; Tatsuo Kawabuchi, Shizuoka-ken, JAPAN;					
** CONTINUING DATA *****					
** FOREIGN APPLICATIONS ***** JAPAN 2002-261318 09/06/2002					
IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** 11/22/2003					
Foreign Priority claimed <input type="checkbox"/> yes <input type="checkbox"/> no 35 USC 119 (a-d) conditions <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after met Verified and Acknowledged	<input type="checkbox"/> Allowance Examiner's Signature _____ Initials _____	STATE OR COUNTRY JAPAN	SHEETS DRAWING 0	TOTAL CLAIMS 20	INDEPENDENT CLAIMS 2
ADDRESS 23373 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON , DC 20037					
TITLE Diazonium salt and thermal recording material using the same					
			<input type="checkbox"/> All Fees		

Smith, Teresa (ASRC)

From: Unknown@Unknown.com
Sent: Thursday, March 03, 2005 7:32 PM
To: STIC-EIC1700
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MyDate=Thu Mar 3 19:31:54 EST 2005

submitto=STIC-EIC1700@uspto.gov

Name=John Chu

Empno=68314

Phone=2-1329

Artunit=1752

Office=Rem 9d-51

Serialnum=10/653242

PatClass=430/157

Earliest=9/6/02

Format1=paper

Searchtopic=Please search the diazonium salt of formulae (1), (2) and (3) in application 10/653242, claims 1-3 and its use in a thermal recording material, claims 4-20.

Please note that the diazonium salt is best represented by general formula (2) and (3)

SCIENTIFIC REFERENCE BR
Sci & Tech Inf - Ctr

MAR 4 RECD

Pat. & T.M. Office

which shows the diazonium salt group as $\text{N}_2 + \text{X}^-$

The Patent Publication No. is 2004/0063021 A1.

A previous EIC structure search was done which didn't include the diazonium salt group in the structure.

Thank you!

John Chu

Comments=Working hrs. M-F 9:30 am - 6:00 pm

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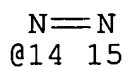
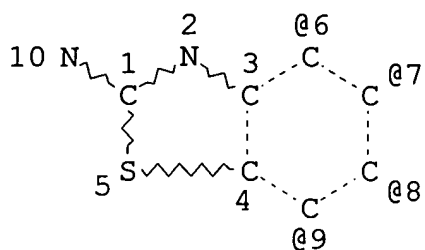
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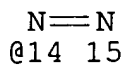
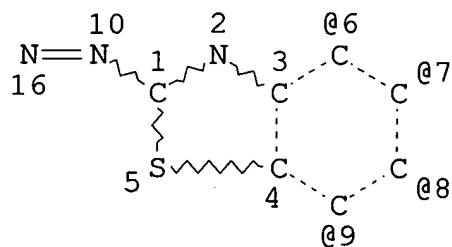
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L8 ANSWER 1 OF 6 CAOLD COPYRIGHT 2005 ACS on STN

AN CA53:22970c CAOLD

TI metal-contg. polyazo coloring matters derived from benzothiazole

PA Davies, Robert R.; Pearson, K. W.; Imperial Chemical Industries Ltd.

DT Patent

PATENT NO.	KIND	DATE
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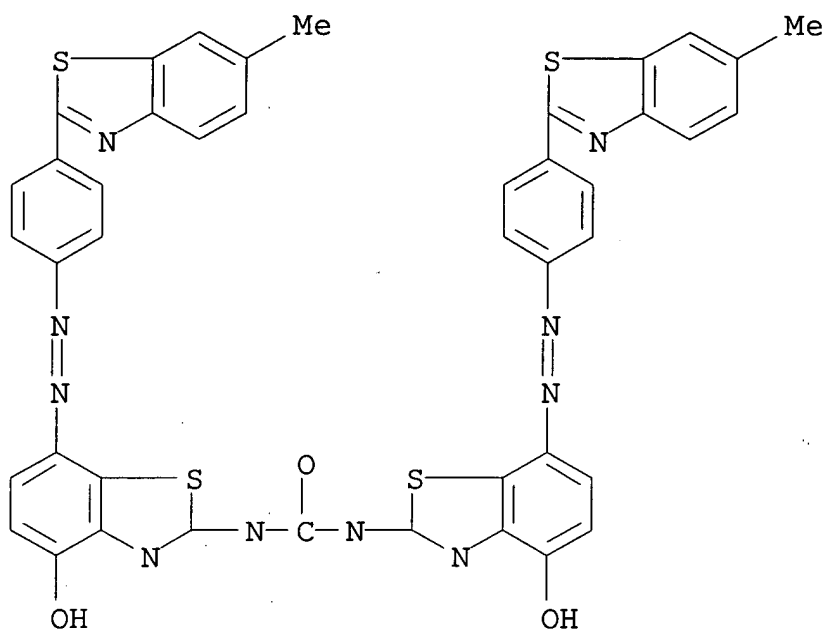
PI GB 811740

IT 103401-18-9 108247-61-6 121969-22-0

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RN 103401-18-9 CAOLD

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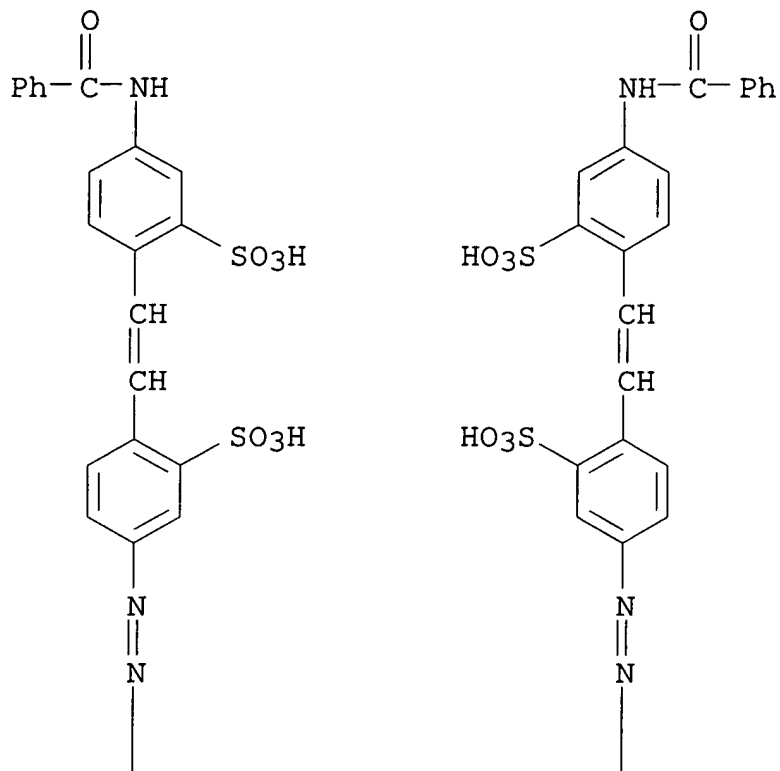


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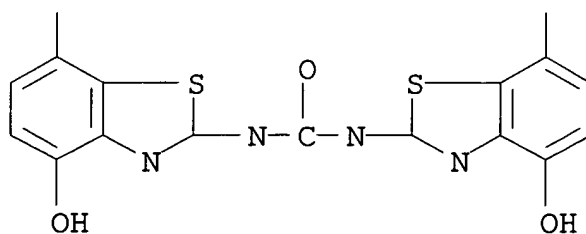
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CN 2,2'-Stilbenedisulfonic acid, 4,4''-[ureylenebis[(4-hydroxy-2,7-benzothiazolediyl)azo]]bis[4'-benzamido- (6CI) (CA INDEX NAME)

PAGE 1-A



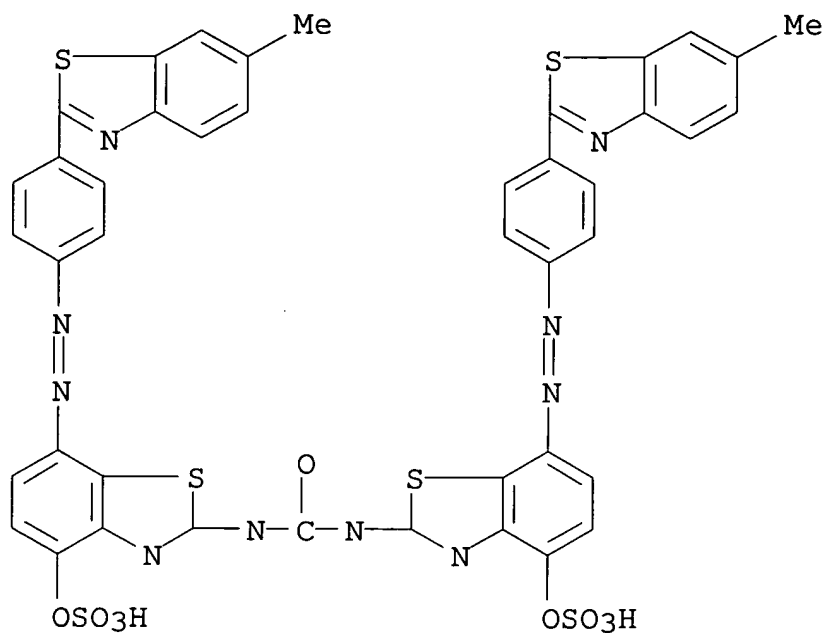
PAGE 2-A



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RN 121969-22-0 CAOLD

CN Urea, 1,3-bis[4-hydroxy-7-(p-6-methyl-2-benzothiazolylphenylazo)-2-benzothiazolyl]-, bis(H sulfate) (6CI) (CA INDEX NAME)



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L8 ANSWER 2 OF 6 CAOLD COPYRIGHT 2005 ACS on STN
 AN CA53:7610f CAOLD
 TI acid anthraquinone dyes
 AU Hindermann, Peter; Koelliker, H. P.; Trautzl, P.
 DT Patent

TI dyes (anthraquinone)
 PA Geigy, J. R., A.-G.
 DT Patent

PATENT NO.	KIND	DATE
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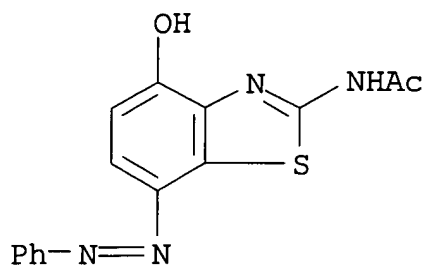
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	DE 1070313	

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IT 100881-44-5

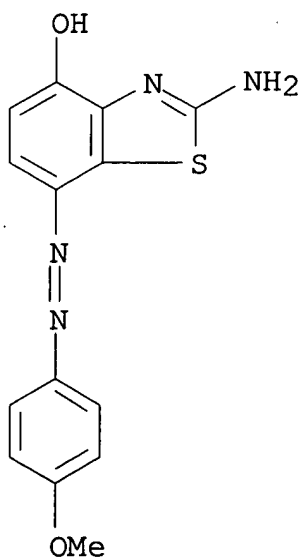
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CN 4-Benzothiazolol, 2-acetamido-7-phenylazo- (6CI) (CA INDEX NAME)



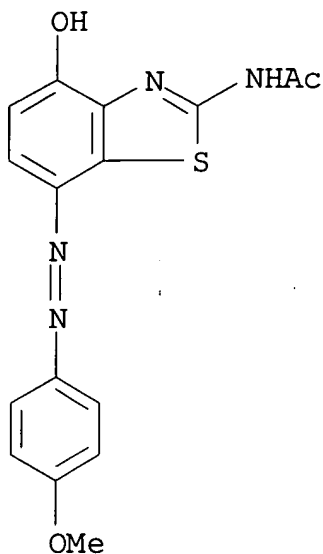
L8 ANSWER 3 OF 6 CAOLD COPYRIGHT 2005 ACS on STN
 AN CA53:7610d CAOLD
 TI dyes (metalizable monoazo) of the phenylazo-4-hydroxybenzothiazole series
 PA Imperial Chemical Industries Ltd.
 DT Patent
 PATENT NO. KIND DATE

 PI GB 801900
 IT 100541-53-5 100621-25-8 101094-93-3 101352-08-3
 106883-40-3
 IT 100621-25-8 101352-08-3
 RN 100621-25-8 CAOLD
 CN 4-Benzothiazolol, 2-amino-7-(p-methoxyphenylazo)- (6CI) (CA INDEX NAME)



RN 101352-08-3 CAOLD

CN 4-Benzothiazolol, 2-acetamido-7-(p-methoxyphenylazo)- (6CI) (CA INDEX NAME)



L8 ANSWER 4 OF 6 CAOLD COPYRIGHT 2005 ACS on STN

AN CA51:7015h CAOLD

TI dyes of anthracene series

AU Nagai, Yoshio

TI dyes of phenanthrene series

AU Kato, Shimpachiro

TI dyes of pyrene and other polynuclear hydrocarbons

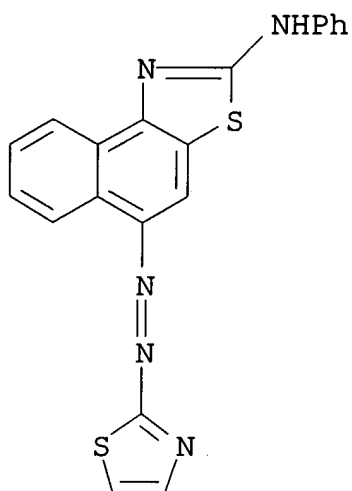
AU Abe, Yoshito; Nagai, Y.

IT 21431-50-5

IT 21431-50-5

RN 21431-50-5 CAOLD

CN Naphtho[1,2-d]thiazole, 2-anilino-5-(2-thiazolylazo)- (6CI, 8CI)
(CA INDEX NAME)



L8 ANSWER 5 OF 6 CAOLD COPYRIGHT 2005 ACS on STN

AN CA51:7014g CAOLD

TI fire extinguisher

AU Biginelli, Oreste F. A.

DT Patent

PATENT NO.	KIND	DATE
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PI FR 1004051

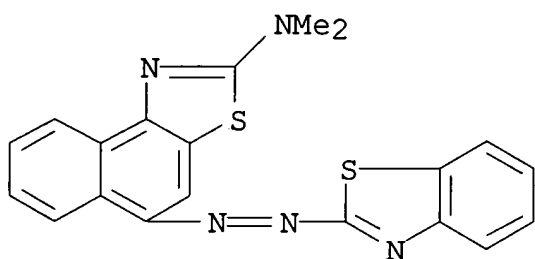
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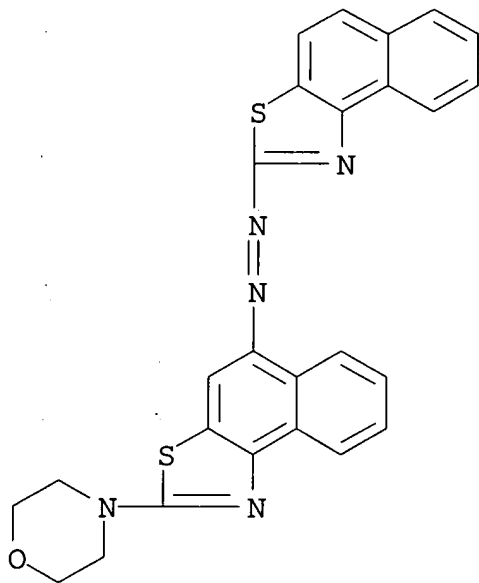
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(6CI, 8CI) (CA INDEX NAME)



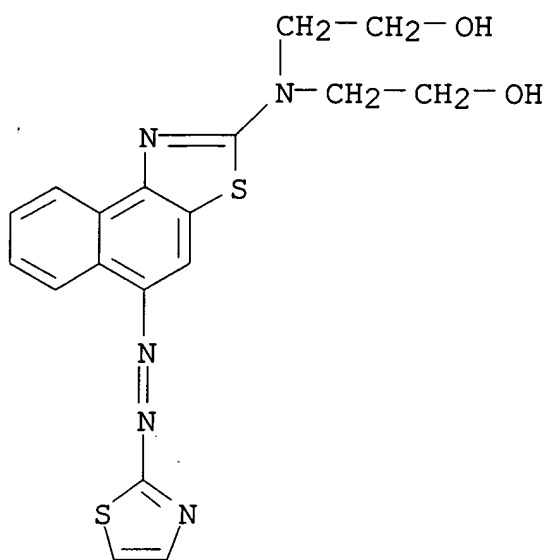
RN 21431-48-1 CAOLD

CN Naphtho[1,2-d]thiazole, 2'-morpholino-2,5'-azobis- (6CI, 8CI) (CA INDEX NAME)



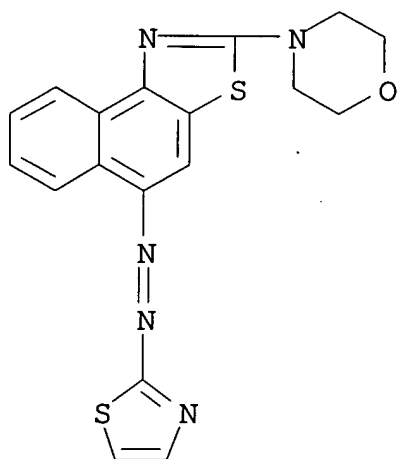
RN 109513-70-4 CAOLD

CN Ethanol, 2,2'-[5-(2-thiazolylazo)naphtho[1,2-d]thiazol-2-ylimino]di- (6CI) (CA INDEX NAME)



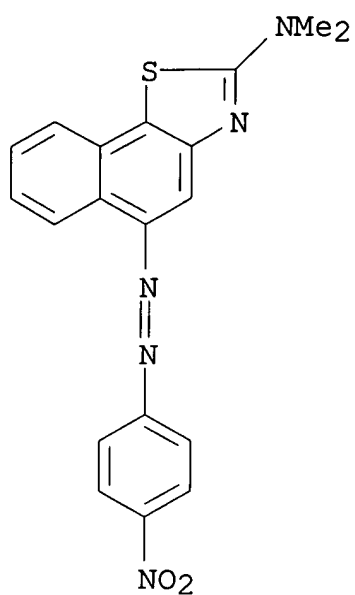
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CN Naphtho[1,2-d]thiazole, 2-morpholino-5-(2-thiazolylazo)- (6CI) (CA INDEX NAME)



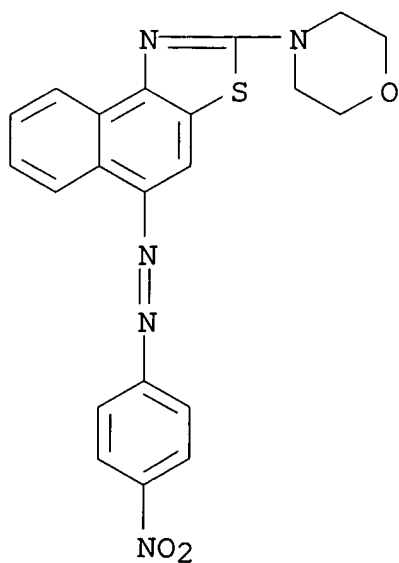
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CN Naphtho[1,2-d]thiazole, 2-dimethylamino-5-(p-nitrophenylazo)- (6CI) (CA INDEX NAME)



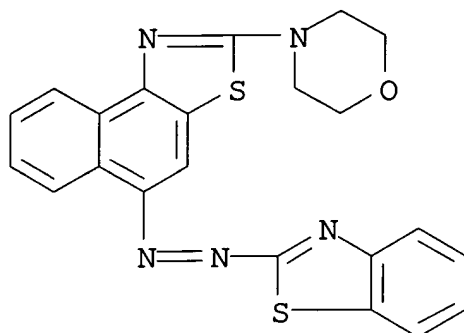
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CN Naphtho[1,2-d]thiazole, 2-morpholino-5-(p-nitrophenylazo)- (6CI)
(CA INDEX NAME)



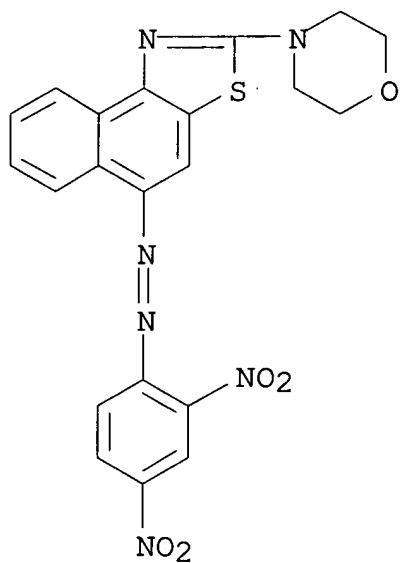
RN 112866-12-3 CAOLD

CN Naphtho[1,2-d]thiazole, 5-(2-benzothiazolylazo)-2-morpholino- (6CI)
(CA INDEX NAME)



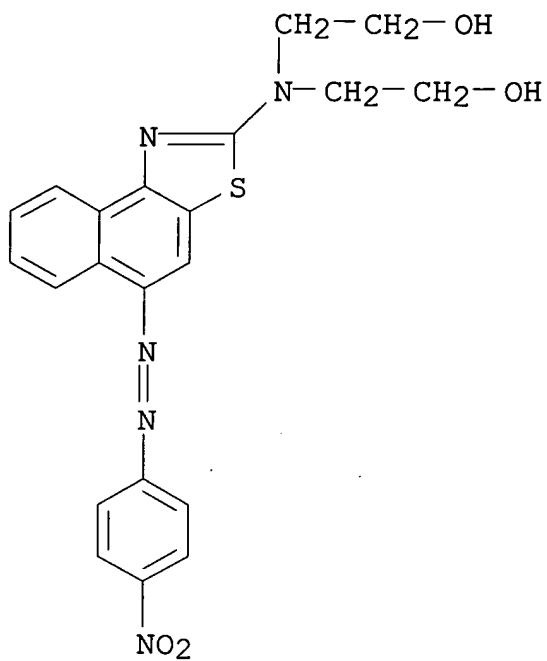
RN 113037-27-7 CAOLD

CN Naphtho[1,2-d]thiazole, 5-(2,4-dinitrophenylazo)-2-morpholino- (6CI)
(CA INDEX NAME)

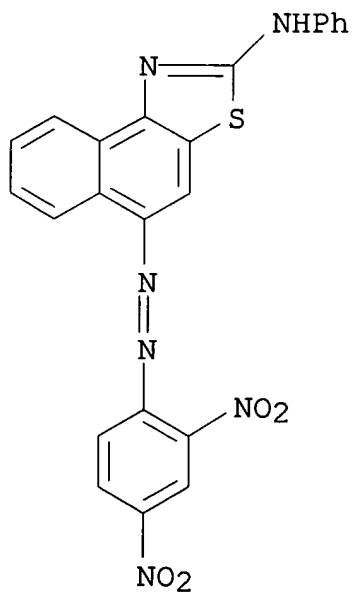


RN 113038-39-4 CAOLD

CN Ethanol, 2,2'-[5-(p-nitrophenylazo)naphtho[1,2-d]thiazo-2-ylimino]di-
(6CI) (CA INDEX NAME)

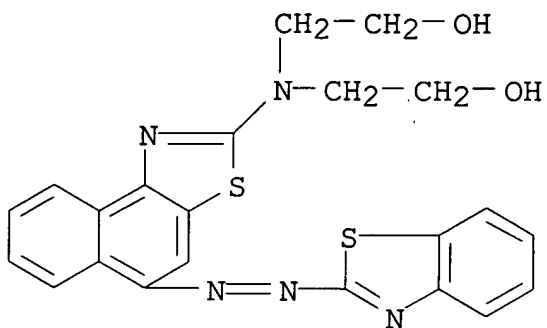


RN 114947-16-9 CAOLD
 CN Naphtho[1,2-d]thiazole, 2-anilino-5-(2,4-dinitrophenylazo)- (6CI)
 (CA INDEX NAME)



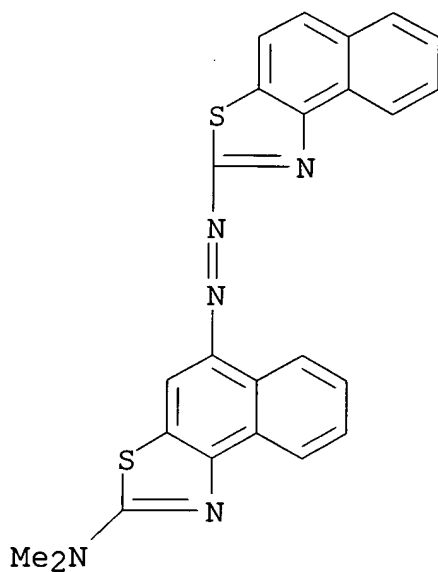
RN 115003-52-6 CAOLD

CN Ethanol, 2,2'-[5-(2-benzothiazolylazo)naphtho[1,2-d]thiazol-2-ylimino]di- (6CI) (CA INDEX NAME)



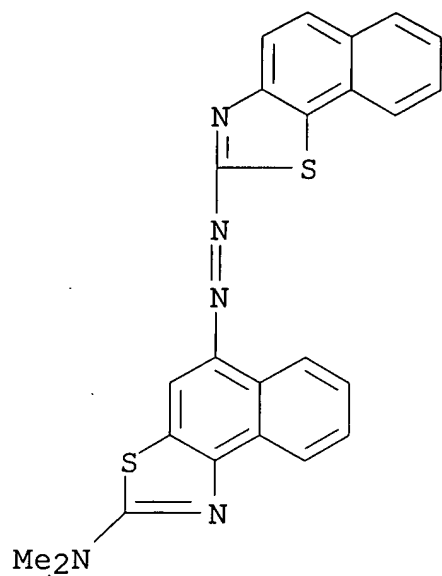
RN 115985-21-2 CAOLD

CN Naphtho[1,2-d]thiazole, 2'-dimethylamino-2,5'-azobis- (6CI) (CA INDEX NAME)



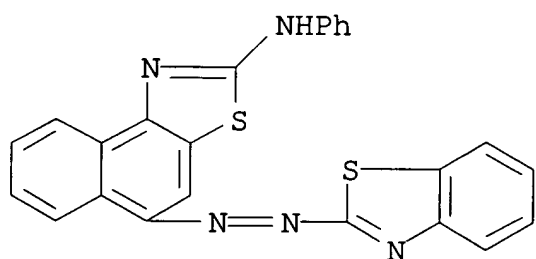
RN 115985-22-3 CAOLD

CN Naphtho[1,2-d]thiazole, 2-dimethylamino-5-naphtho[2,1-d]thiazol-2-ylazo- (6CI) (CA INDEX NAME)



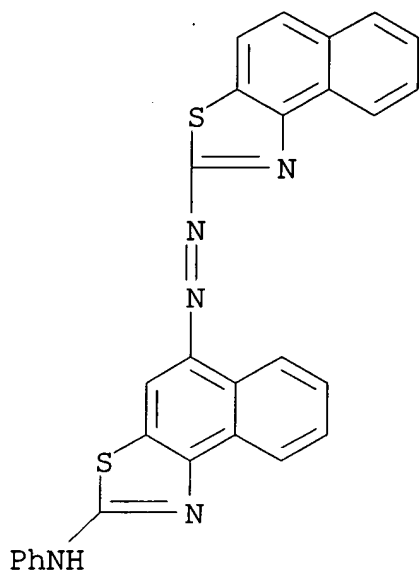
RN 120233-62-7 CAOLD

CN Naphtho[1,2-d]thiazole, 2-anilino-5-(2-benzothiazolylazo)- (6CI)
(CA INDEX NAME)



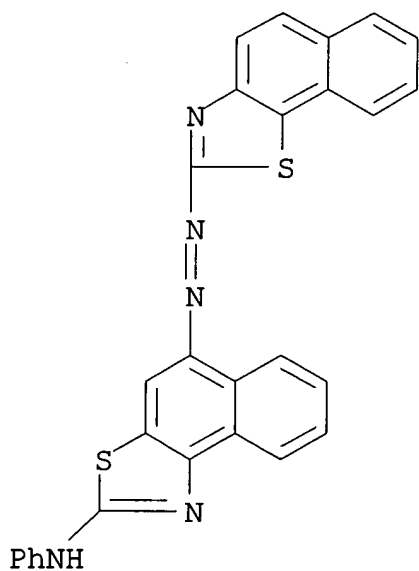
RN 124121-81-9 CAOLD

CN Naphtho[1,2-d]thiazole, 2'-anilino-2,5'-azobis- (6CI) (CA INDEX
NAME)



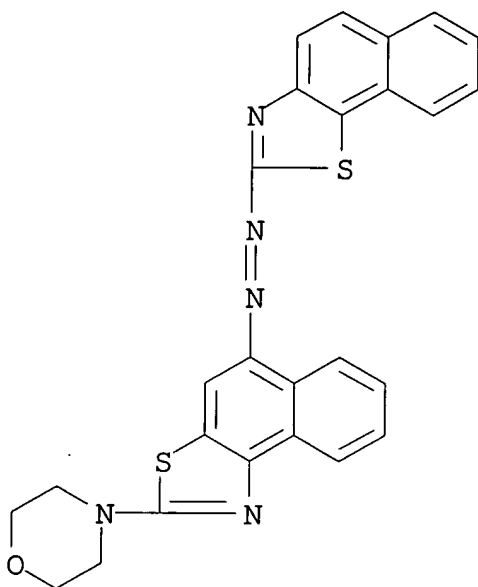
RN 124121-82-0 CAOLD

CN Naphtho[1,2-d]thiazole, 2-anilino-5-naphtho[2,1-d]thiazol-2-ylazo-
(6CI) (CA INDEX NAME)



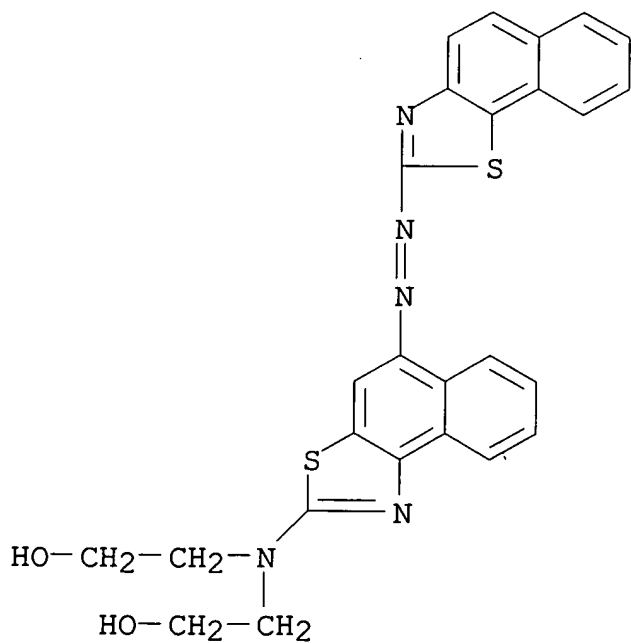
RN 124143-10-8 CAOLD

CN Naphtho[1,2-d]thiazole, 2-morpholino-5-naphtho[2,1-d]thiazol-2-ylazo-
(6CI) (CA INDEX NAME)



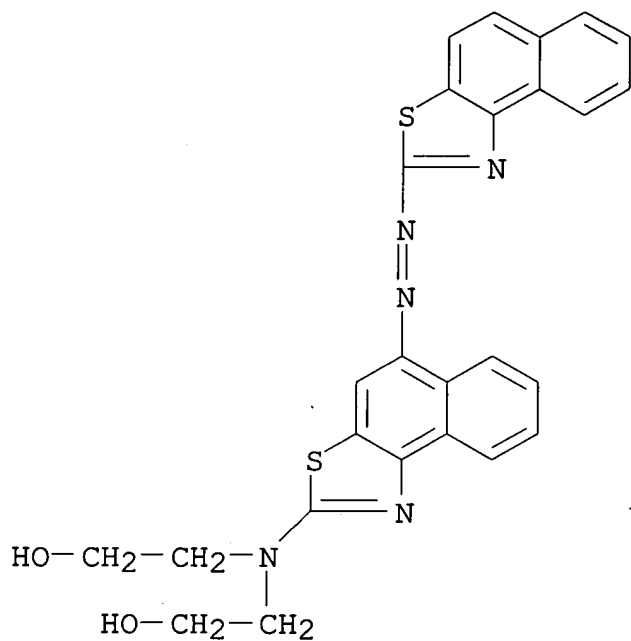
RN 124180-38-7 CAOLD

CN Ethanol, 2,2'-(5-naphtho[2,1-d]thiazol-2-ylazonaphtho[1,2-d]thiazol-2-ylimino)di- (6CI) (CA INDEX NAME)



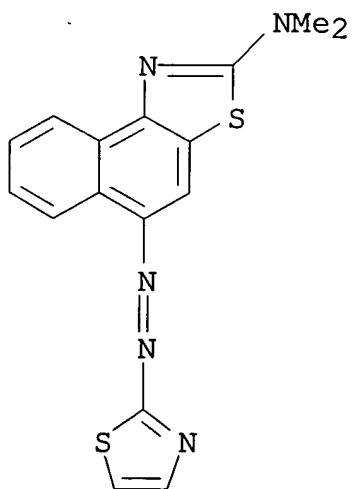
RN 124180-39-8 CAOLD

CN Ethanol, 2,2'-(5-naphtho[1,2-d]thiazol-2-ylazonaphtho[1,2-d]thiazol-2-ylimino)di- (6CI) (CA INDEX NAME)



RN 130862-27-0 CAOLD

CN Naphtho[1,2-d]thiazole, 2-dimethylamino-5-(2-thiazolylazo)- (6CI)
(CA INDEX NAME)



L8 ANSWER 6 OF 6 CAOLD COPYRIGHT 2005 ACS on STN

AN CA51:6715f CAOLD

TI carbonyloxy steroids

AU Korman, Jerome; Hogg, J. A.

PA Upjohn Co.

DT Patent

PATENT NO.	KIND	DATE
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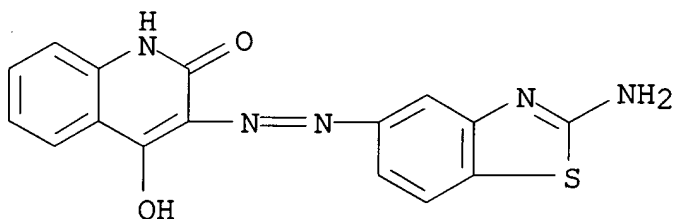
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IT	1667-98-7 102472-21-9 103161-24-6 107625-78-5 111319-10-9	
	111319-12-1 124202-67-1	

IT 107625-78-5

RN 107625-78-5 CAOLD

CN 2,4-Quinolinediol, 3-(2-amino-5-benzothiazolylazo)- (6CI) (CA INDEX NAME)



=> file zca

FILE 'ZCA' ENTERED AT 13:23:57 ON 10 MAR 2005

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L9 ANSWER 1 OF 21 ZCA COPYRIGHT 2005 ACS on STN

131:351990 Syntheses and properties of some self-coloring polyesters.

Pang, Xiaoyi; Xin, Zhong; Dai, Gance (Polymer Processing Lab., E. China Univ. of Sci. and Techn., Shanghai, Peop. Rep. China).

Gaofenzi Cailiao Kexue Yu Gongcheng, 15(4), 44-47 (Chinese) 1999.

CODEN: GCKGEI. ISSN: 1000-7555. Publisher: "Gaofenzi Cailiao Kexue Yu Gongcheng" Bianjibu.

AB Self-coloring polyesters were prep'd. by polymn. of di-Me terephthalate and ethylene glycol with colorants having -OH, -NH2 groups as the third monomer. The contents of the incorporated

colorant in the polyesters were detd. The intrinsic viscosity and the propagation rate of the polyester polyester decreased with increasing the colorant content. DSC thermograms of the polyesters showed that the m.p. of the self-coloring polyesters was lower than that of PET and there are no obvious glass transitions (Tg). The soly. of colorants was greatly improved as they were incorporated into the chain of polyester. The products were detd. by IR, UV, DSC, and TGA. The effects of temp. on polymn. was discussed.

IT 250641-55-5P, 4'-[N,N-Bis(.beta.-hydroxyethyl)amino]-5'-methoxy-2'-acetamido azobenzothiazole-dimethyl terephthalate-ethylene glycol copolymer

(prepn. and properties of self-coloring polyesters)

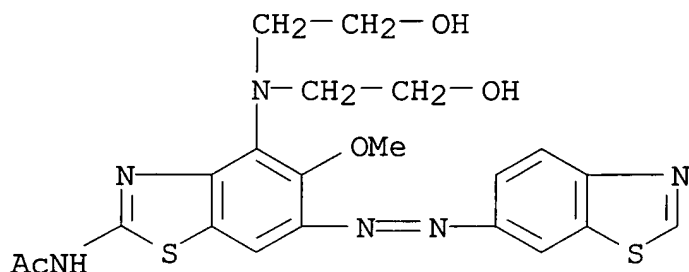
RN 250641-55-5 ZCA

CN 1,4-Benzenedicarboxylic acid, dimethyl ester, polymer with N-[6-(6-benzothiazolylazo)-4-[bis(2-hydroxyethyl)amino]-5-methoxy-2-benzothiazolyl]acetamide and 1,2-ethanediol (9CI) (CA INDEX NAME)

CM 1

CRN 250641-54-4

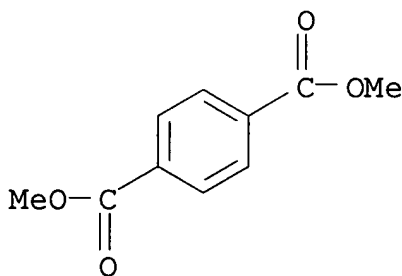
CMF C21 H22 N6 O4 S2



CM 2

CRN 120-61-6

CMF C10 H10 O4



CM 3

CRN 107-21-1

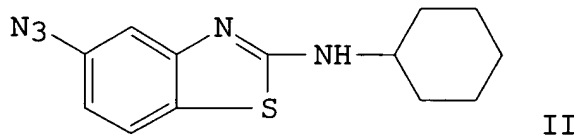
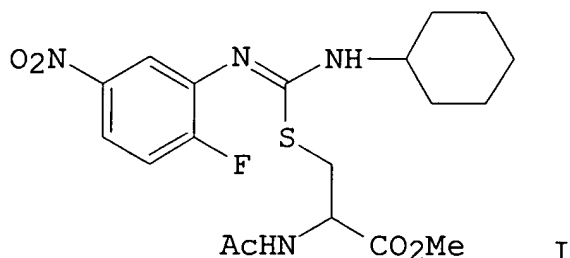
CMF C2 H6 O2

 $\text{HO}-\text{CH}_2-\text{CH}_2-\text{OH}$

IT **250641-55-5P**, 4'-[N,N-Bis(.beta.-hydroxyethyl)amino]-5'-methoxy-2'-acetamido azobenzothiazole-dimethyl terephthalate-ethylene glycol copolymer
(prepn. and properties of self-coloring polyesters)

L9 ANSWER 2 OF 21 ZCA COPYRIGHT 2005 ACS on STN
119:49290 N-acetylcysteine methyl ester: an efficient sulfur transfer agent. Gilman, Alex; Spero, Denice M. (Boehringer Ingelheim Pharm. Inc., Ridgefield, CT, 06977, USA). Tetrahedron Letters, 34(11), 1751-2 (English) 1993. CODEN: TELEAY. ISSN: 0040-4039. OTHER SOURCES: CASREACT 119:49290.

GI

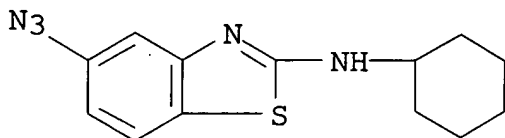


AB The sulfur transfer capability of N-acetylcysteine Me ester is illustrated by its addn. to a 2-fluorophenylcarbodiimide to give I which on .beta.-elimination and cyclization in a novel route gave aminobenzothiazoles, e.g. II.

IT **148343-29-7P**
(prepn. of)

RN 148343-29-7 ZCA

CN 2-Benzothiazolamine, 5-azido-N-cyclohexyl- (9CI) (CA INDEX NAME)



IT 148343-29-7P
(prepn. of)

L9 ANSWER 3 OF 21 ZCA COPYRIGHT 2005 ACS on STN

118:74853 Determination of the hapten density of immunoconjugates by matrix-assisted UV laser desorption/ionization mass spectrometry. Wengatz, I.; Schmid, R. D.; Kreissbig, S.; Wittmann, C.; Hock, B.; Ingendoh, A.; Hillenkamp, F. (Abt. Enzymtechnolog., GBF-Ges. Biotechnol. Forsch. mbH, Braunschweig, W-3300, Germany). Analytical Letters, 25(11), 1983-97 (English) 1992. CODEN: ANALBP. ISSN: 0003-2719.

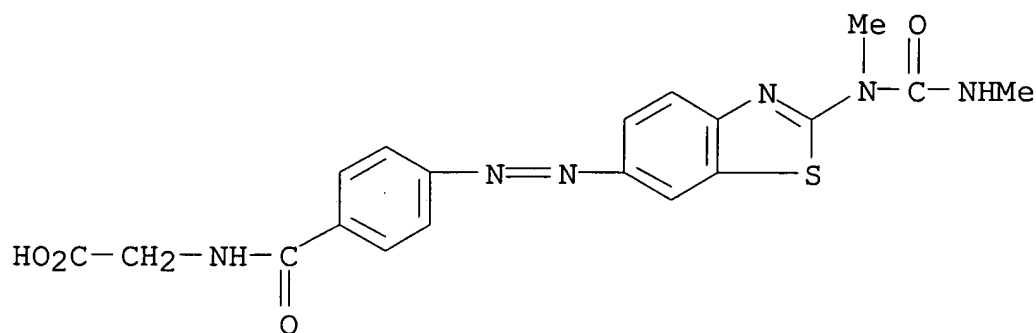
AB Information on the hapten densities of immunoconjugates, that is the no. of coupled haptens, is important for the prodn. of antibodies directed towards the resp. hapten, e.g. a pesticide. Matrix-assisted UV laser desorption mass spectrometry (MALDI) provides a sensitive method for the measurement of the mol. wt. of large bioorg. compds. The mass resolu. of approx. 100, currently achievable with this technique in conjunction with a careful centroiding procedure of the peaks, is sufficient for the detn. of the hapten d. Different immunoconjugates and labeled enzymes used in enzyme immunoassays were investigated in order to evaluate the hapten d., as inferred from the measured differences in mass between the conjugated and nonconjugated carrier mol. The pesticides methabenzthiazuron, phenoxybenzoic acid and derivs. of atrazine and pyrethroids were used as haptens. Hapten densities detd. from mass spectra were compared to those based on UV spectra. Values detd. by MALDI were considerably lower than those indicated by the UV spectra. This is most probably due to the fact that MALDI detects only covalently bound haptens whereas haptens bound by adsorption may also contribute to the signal in the UV-spectrum. The consequences of the MALDI results for immunization are discussed.

IT 145612-67-5

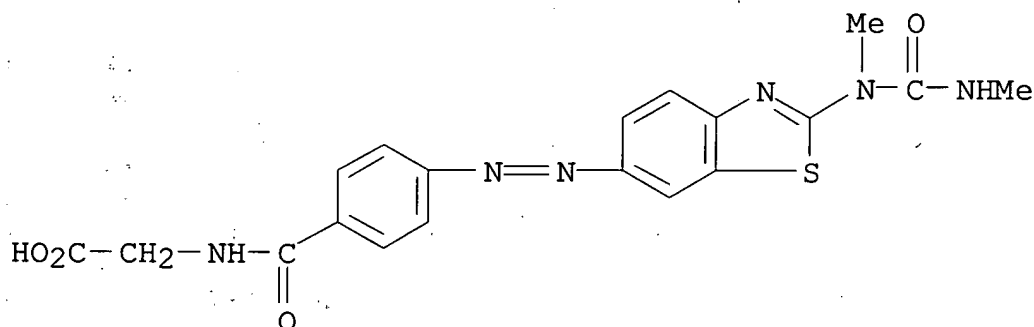
(detn. of, in immunoconjugates, by matrix-assisted UV laser desorption/ionization mass spectrometry)

RN 145612-67-5 ZCA

CN Glycine, N-[4-[[2-[methyl[(methyamino)carbonyl]amino]-6-benzothiazolyl]azo]benzoyl]- (9CI) (CA INDEX NAME)



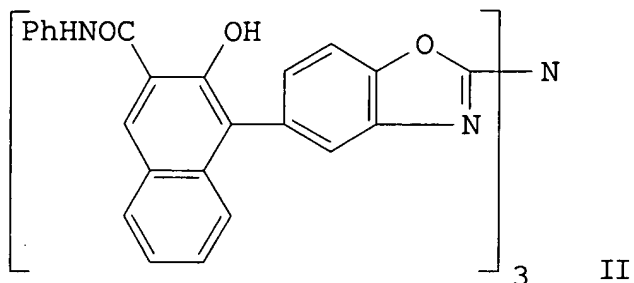
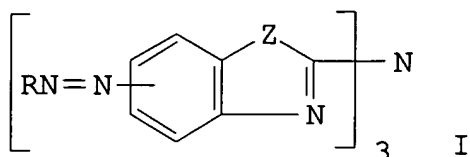
IT 145612-67-5D, conjugates
 (hapten d. of, detn. of, by matrix-assisted UV laser
 desorption/ionization mass spectrometry)
 RN 145612-67-5 ZCA
 CN Glycine, N-[4-[[2-[methyl[(methyamino)carbonyl]amino]-6-
 benzothiazolyl]azo]benzoyl]- (9CI) (CA INDEX NAME)



IT 145612-67-5
 (detn. of, in immunoconjugates, by matrix-assisted UV laser
 desorption/ionization mass spectrometry)
 IT 145612-67-5D, conjugates
 (hapten d. of, detn. of, by matrix-assisted UV laser
 desorption/ionization mass spectrometry)

L9 ANSWER 4 OF 21 ZCA COPYRIGHT 2005 ACS on STN
 113:106391 Electrophotographic photoreceptors using a trisazo pigment as
 a charge-generating agent. Go, Nobutetsu; Matsumoto, Masakazu
 (Canon K. K., Japan). Jpn. Kokai Tokkyo Koho JP 01292352 A2
 19891124 Heisei, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION:
 JP 1988-121942 19880520.

GI



AB Electrophotog. photoreceptors have, on a conductive substrate, a photoconductive layer contg. a trisazo pigment I (R = coupler residue having phenolic OH group; Z = O, S). The photoreceptors exhibit good thermal resistance, lightfastness, sensitivity, and cyclicability and adaptable to all kinds of photog. processes. Thus, an Al substrate with an undercoat layer was coated with a compn. contg. II and butyral resin and overcoated with a compn. contg. p-diethylaminobenzaldehyde N-.alpha.-naphthyl-N-phenylhydrazone and poly(Me methacrylate) resin, and the obtained photoreceptor was corona charged (-5.5 kV) and exposed to a 2 lx source after 1 s in the dark. The initial potential and exposure required to reduce the retained potential after 1 s in the dark by half were -685 V and 1.8 lx-s, resp.

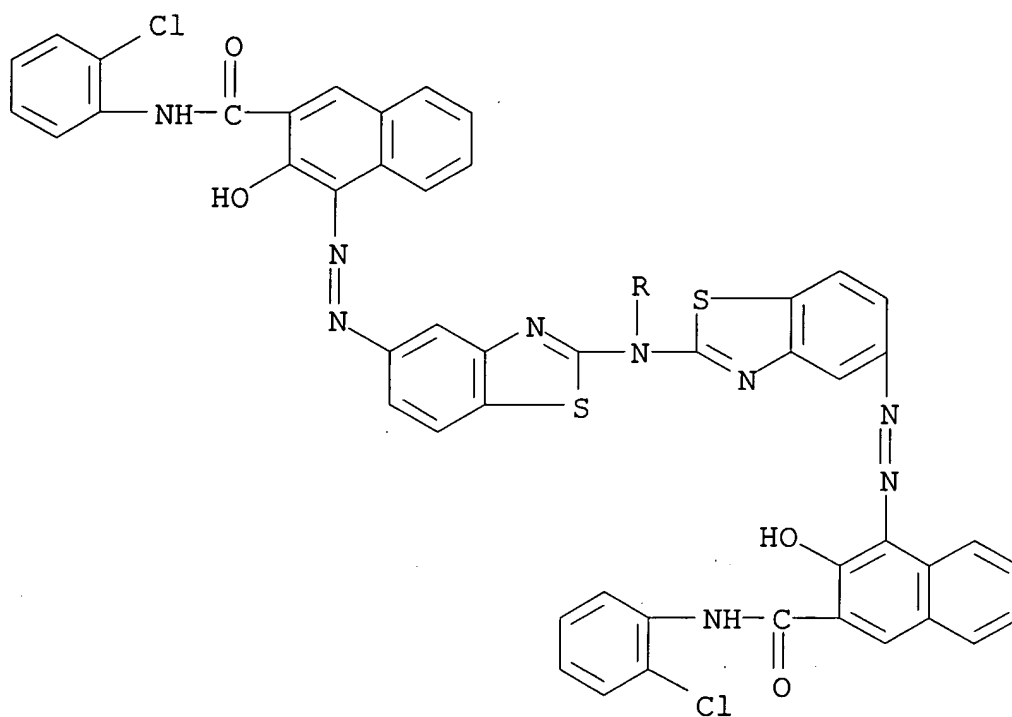
IT 128912-67-4 128912-70-9 128912-77-6

(charge generating agent, for electrophotog. photoreceptors)

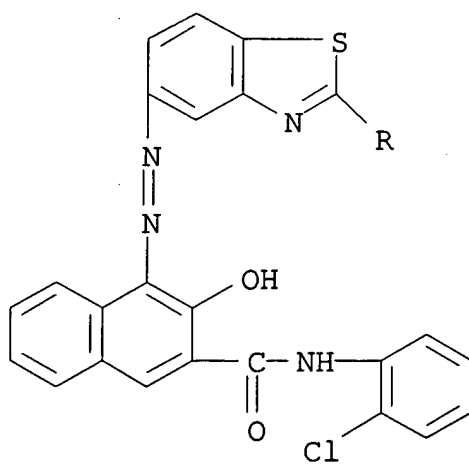
RN 128912-67-4 ZCA

CN 2-Naphthalenecarboxamide, 4,4',4'''-[nitrilotris(2,5-benzothiazolediylazo)]tris[N-(2-chlorophenyl)-3-hydroxy- (9CI) (CA INDEX NAME)

PAGE 1-A



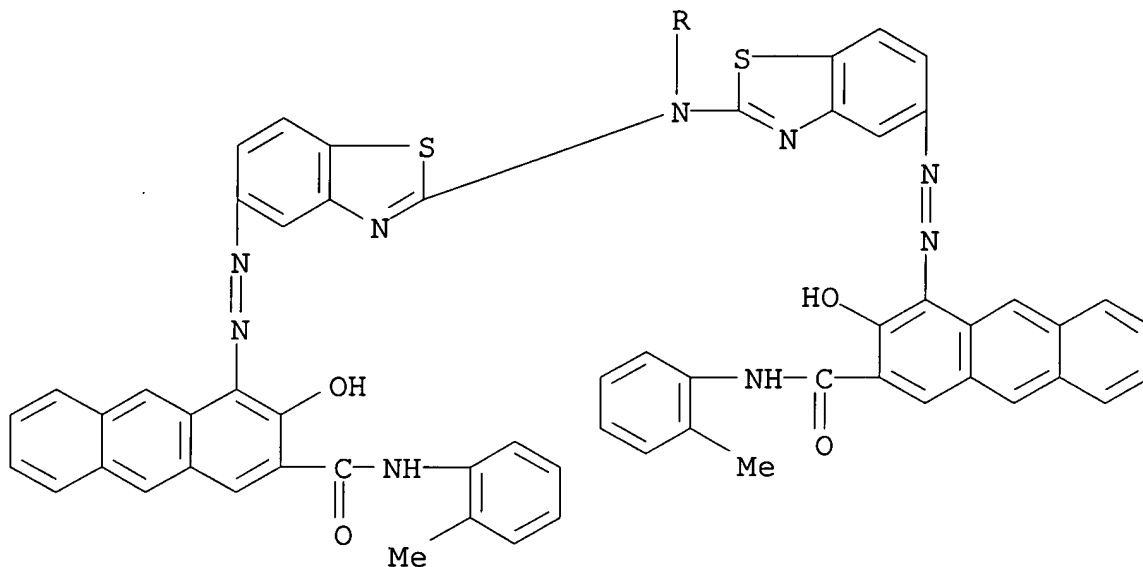
PAGE 2-A



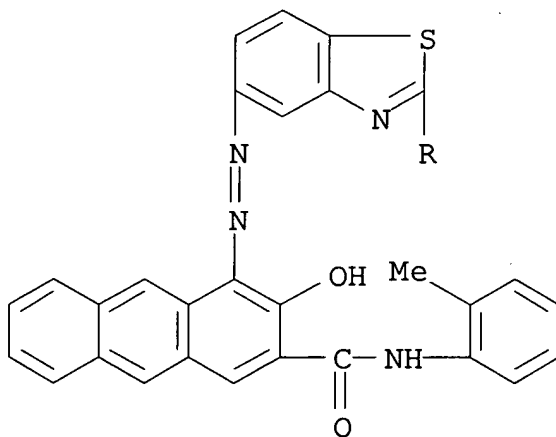
RN 128912-70-9 ZCA
 CN 2-Anthracenecarboxamide, 4,4',4''-[nitrilotris(2,5-

benzothiazolediylazo)]tris[3-hydroxy-N-(2-methylphenyl)- (9CI) (CA
INDEX NAME)

PAGE 1-A

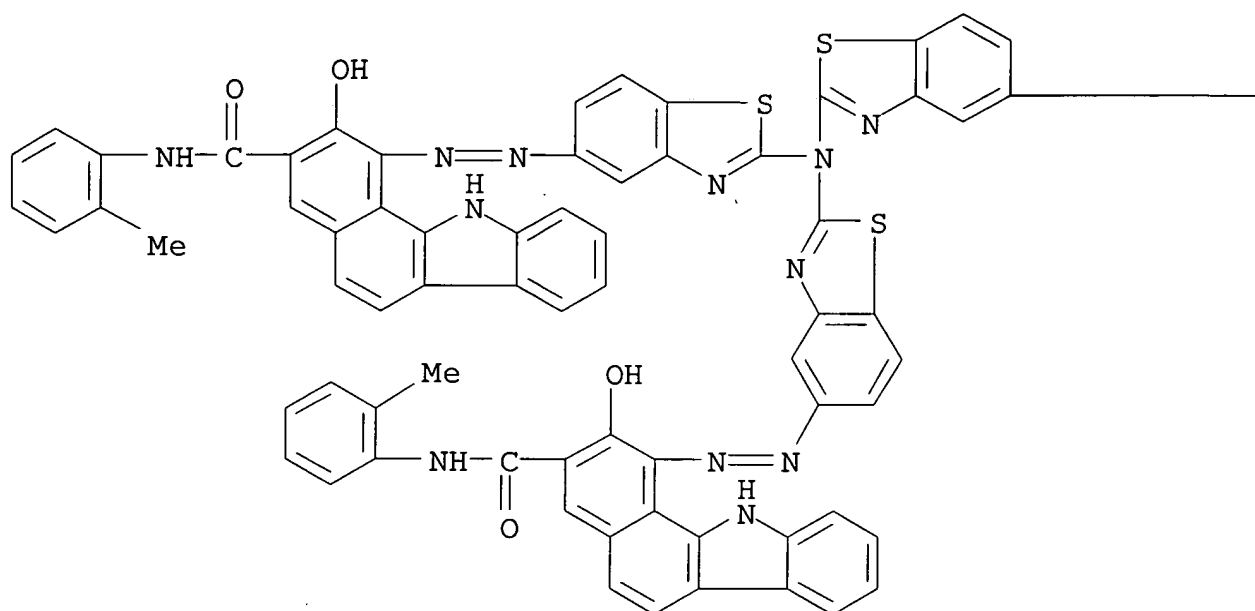


PAGE 2-A

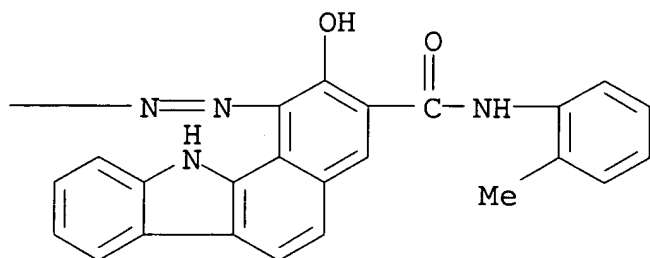


RN 128912-77-6 ZCA
CN 11H-Benzo[a]carbazole-3-carboxamide, 1,1',1''-[nitritotris(2,5-
benzothiazolediylazo)]tris[2-hydroxy-N-(2-methylphenyl)- (9CI) (CA
INDEX NAME)

PAGE 1-A



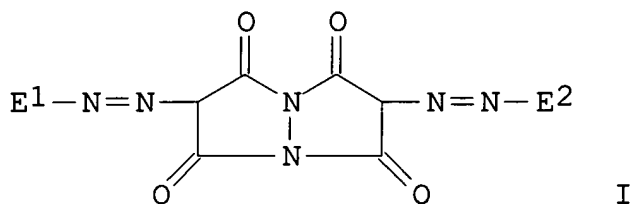
PAGE 1-B



IT 128912-67-4 128912-70-9 128912-77-6
(charge generating agent, for electrophotog. photoreceptors)

L9 ANSWER 5 OF 21 ZCA COPYRIGHT 2005 ACS on STN
112:79427 Water-insoluble disazo dyes for polymers and coatings. Jung,
Ruediger; Deubel, Reinhold (Hoechst A.-G., Fed. Rep. Ger.). Ger.
Offen. DE 3738542 A1 19890524, 9 pp. (German). CODEN: GWXXBX.
APPLICATION: DE 1987-3738542 19871113.

GI



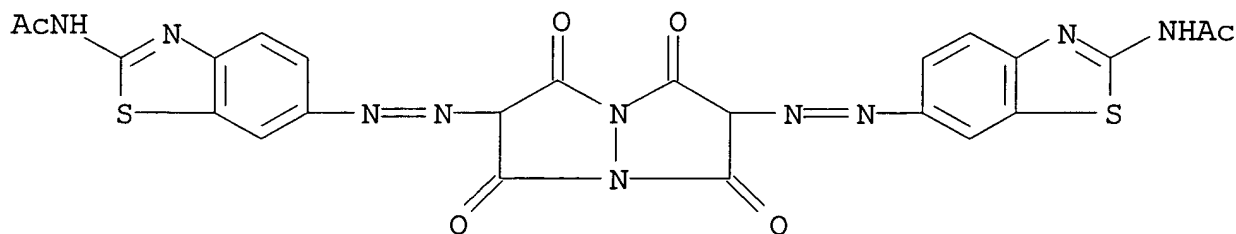
AB The title dyes I [E1, E2 = (un)substituted aryl], useful for polymers, lacquers, and printing inks, are prepd. by coupling diazotized arylamines with 1,5-diazabicyclo[3.3.0]octane-2,4,6,8-tetrone (II) (1:0.5 mol ratio, resp.) in the presence of an anionic or nonionic surfactant. 3-Amino-4-chlorobenzamide was diazotized and coupled with II in the presence of a 10% aq. soln. of polyethylene glycol oleyl ester, producing I (E1 = E2 = 2,5-Cl(H₂NCO)C₆H₄) (no color data), which was used to color an alkyd-melamine resin lacquer.

IT **124282-64-0P**

(manuf. of, as water-insol. dyes for polymers and coating materials)

RN 124282-64-0 ZCA

CN Acetamide, N,N'-[(tetrahydro-1,3,5,7-tetraoxo-1H,5H-pyrazolo[1,2-a]pyrazole-2,6-diyl)bis(azo-6,2-benzothiazole-diyl)]bis- (9CI) (CA INDEX NAME)



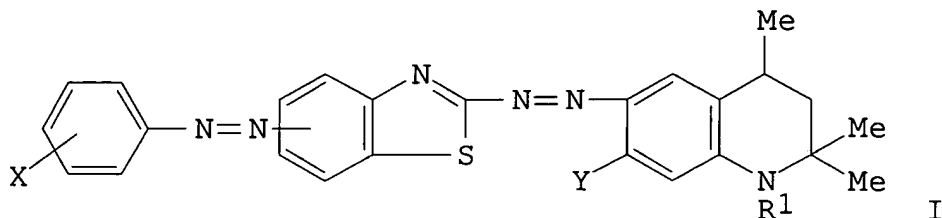
IT **124282-64-0P**

(manuf. of, as water-insol. dyes for polymers and coating materials)

L9 ANSWER 6 OF 21 ZCA COPYRIGHT 2005 ACS on STN

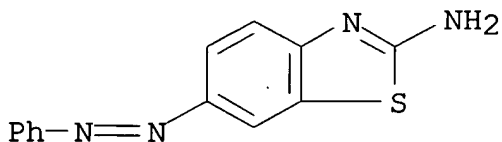
107:116951 Disazo dyes. Himeno, Kiyoshi; Yoshihara, Junji (Mitsubishi Chemical Industries Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 62039663 A2 19870220 Showa, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1985-177329 19850812.

GI



AB The title dyes I [X = H, halogen, C1-8 alkyl, C1-8 alkoxy, nitro, cyano, CF₃, SO₂R₂, COR₂, CO₂R₂; Y = H, Cl, Me, C1-4 alkoxy, acylamino; R₁, R₂ = H, alkenyl, aryl, (un)substituted C1-8 alkyl] were prepd. and used for dyeing polyester fibers in fast orange to blue shades. Thus, 2-amino-6-(phenylazo)benzothiazole was diazotized and coupled with 1-(2-acetoxyethyl)-2,2,4,7-tetramethyl-1,2,3,4-tetrahydroquinoline to give I (X = H; Y = Me; R₁ = CH₂CH₂OAc), bluish red on polyester fiber with better wetfastness after polyurethane finishing than a similar conventional dye having a p-C₆H₄N(CH₂CH₂CN)CH₂CH₂OCH₂CH₂CN group in place of the tetrahydroquinoline group.

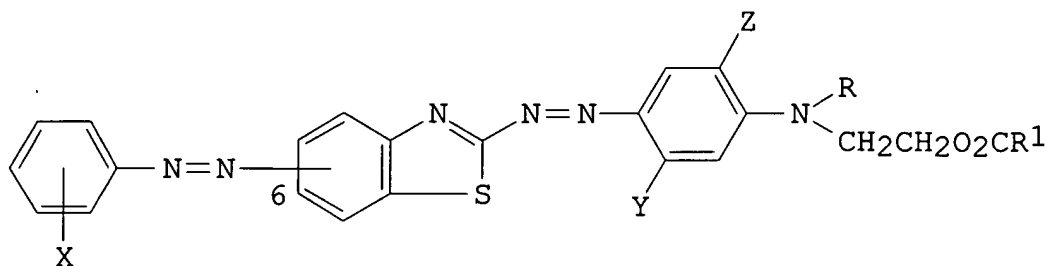
IT **27697-54-7**
(coupling of diazotized, with tetrahydroquinoline derivs.)
RN 27697-54-7 ZCA
CN 2-Benzothiazolamine, 6-(phenylazo)- (9CI) (CA INDEX NAME)



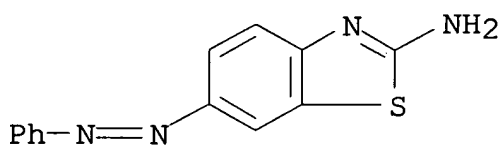
IT **27697-54-7**
(coupling of diazotized, with tetrahydroquinoline derivs.)

L9 ANSWER 7 OF 21 ZCA COPYRIGHT 2005 ACS on STN
106:215494 Disazo dyes. Himeno, Kiyoshi; Yoshihara, Junji (Mitsubishi Chemical Industries Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 62013460 A2 19870122 Showa, 13 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 1985-151203 19850711.

GI



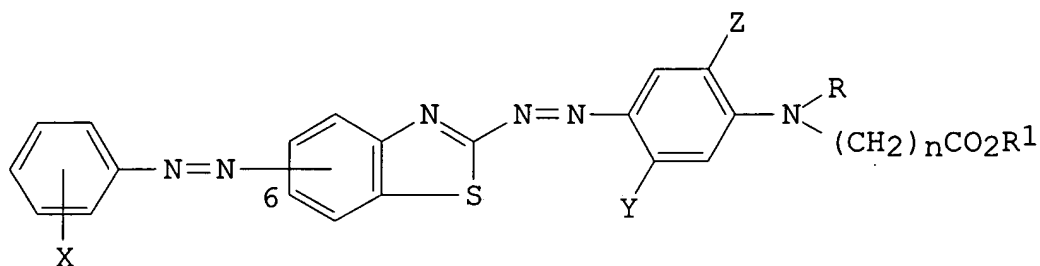
- AB Disazo dyes I [X = H, halogen, alkyl, alkoxy, nitro, cyano, CF₃, SO₂R, COR, CO₂R; Y = H, Cl, Me, lower alkoxy, acylamino; Z = H, Me, lower alkoxy, lower alkoxyalkoxy, Cl, Br; R = H, (un)substituted C1-8 alkyl, alkenyl, aryl, tetrahydrofurfuryl; R₁ = halopropyl, C5-8 alkyl, C1-10 alkoxy, aralkyloxy, aralkyloxyalkoxy, PhO] were prepd. and used for dyeing polyester fibers in red shades showing excellent wetfastness after resin finishing. 2-Amino-6-(phenylazo)benzothiazole was diazotized and coupled with PhNMeCH₂CH₂O₂C(CH₂)₃Cl to give I (X = Y = Z = H; R = Me; R₁ = 3-chloropropyl; azo bonding at the 6-position).
- IT **27697-54-7**, 2-Amino-6-(phenylazo)benzothiazole
(coupling of diazotized, with aniline derivs.)
- RN 27697-54-7 ZCA
- CN 2-Benzothiazolamine, 6-(phenylazo)- (9CI) (CA INDEX NAME)



- IT **27697-54-7**, 2-Amino-6-(phenylazo)benzothiazole
(coupling of diazotized, with aniline derivs.)

L9 ANSWER 8 OF 21 ZCA COPYRIGHT 2005 ACS on STN
 106:157963 Disazo dyes. Himeno, Kiyoshi; Yoshihara, Junji (Mitsubishi Chemical Industries Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 62013461 A2 19870122 Showa, 13 pp. (Japanese). CODEN: JKXXAF.
 APPLICATION: JP 1985-151204 19850711.

GI



I

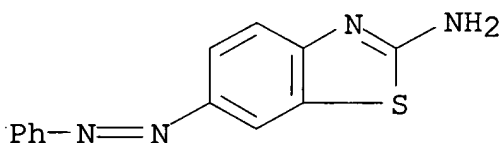
AB Disazo dyes I [X = H, halogen alkyl, alkoxy, nitro, cyano, CF₃, SO₂R, COR, CO₂R; Y = H, Cl, Me, lower alkoxy, acrylamino; Z = H, Me, lower alkoxy, lower alkoxyalkoxy, Cl, Br; R = H, (un)substituted C1-8 alkyl, alkenyl, aryl, tetrahydrofurfuryl; R₁ = C5-12 alkyl, aralkyl, phenoxyalkyl; n = 1-3] were prepd. and used for dyeing polyester fibers in red shades showing excellent wetfastness after resin finishing. Thus, 2-amino-6-(phenylazo)benzothiazole was diazotized and coupled with PhNMeCH₂CH₂CO₂CH₂CH₂OPh to give I (X = Y = Z = H; R = Me; R₁ = 2-phenoxyethyl; n = 2; azo bonding at the 6-position).

IT 27697-54-7

(coupling of diazotized, with aniline derivs.)

RN 27697-54-7 ZCA

CN 2-Benzothiazolamine, 6-(phenylazo)- (9CI) (CA INDEX NAME)



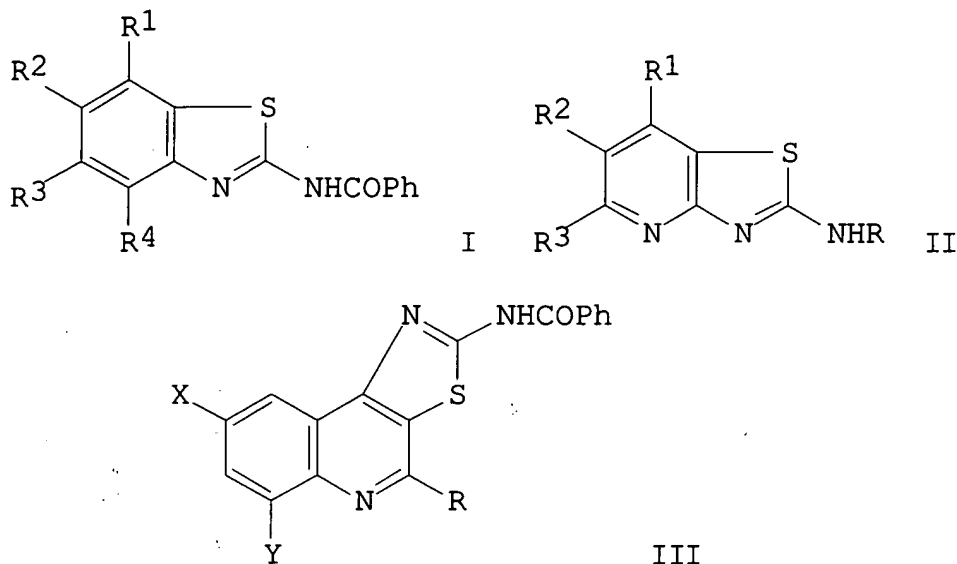
IT 27697-54-7

(coupling of diazotized, with aniline derivs.)

L9 ANSWER 9 OF 21 ZCA COPYRIGHT 2005 ACS on STN

104:207181 Synthesis and spectral characterization of some new N-substituted 2-aminobenzothiazoles, 2-aminothiazolopyridines and 2-aminothiazoloquinolines. Sarkis, George Y.; Faisal, Essam D. (Coll. Sci., Univ. Baghdad, Baghdad, Iraq). Journal of Heterocyclic Chemistry, 22(3), 725-8 (English) 1985. CODEN: JHTCAD. ISSN: 0022-152X. OTHER SOURCES: CASREACT 104:207181.

GI



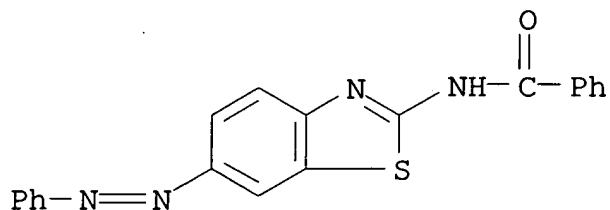
AB Title compds. I ($R_1 = \text{H, NO}_2, \text{OMe}$; $R_2 = \text{H, Cl, NO}_2, \text{NHAc, OMe, NEt}_2, \text{N:NPh}$; $R_3 = \text{H, NO}_2, \text{OMe}$; $R_4 = \text{H, Cl, NO}_2$), II ($R_1 = \text{H, Me}$; $R_2 = \text{H, Cl}$; $R_3 = \text{H, Cl, Me}$; $R = \text{p-FC}_6\text{H}_4, \text{Ph, COPh}$), and III ($X, Y = \text{H, Br}$; $R = \text{Me, p-ClC}_6\text{H}_4, \text{p-FC}_6\text{H}_4$) were prepd. by cyclization of N,N'-disubstituted thioureas by Br in HOAc.

IT **100856-61-9P**

(prepn. and spectra of)

RN 100856-61-9 ZCA

CN Benzamide, N-[6-(phenylazo)-2-benzothiazolyl]- (9CI) (CA INDEX NAME)



IT **100856-61-9P**

(prepn. and spectra of)

L9 ANSWER 10 OF 21 ZCA COPYRIGHT 2005 ACS on STN

93:169636 Disperse dyes. Part XVIII. Synthesis of disperse azo dyes from 2-amino-6-phenylazobenzothiazole and their dyeing properties. Patil, Arun R.; Sunthakar, S. V. (Dep. Chem. Technol., Univ. Bombay, Bombay, 400 019, India). Indian Journal of Textile Research, 5(1), 10-12 (English) 1980. CODEN: IJTRDU. ISSN:

0377-8436.

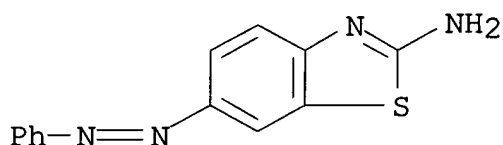
AB 2-Amino-6-(phenylazo)benzothiazole (I) [27697-54-7] was prepd. in 93% yield by reaction of p-aminoazobenzene [148-87-8] with NH_4NCS and Br in HOAc. I was diazotized in $\text{H}_3\text{PO}_4\text{-HNO}_3$ mixts. and coupled with N,N-dialkylaniline derivs. to give disazo dyes. Some of these dyes showed good pickup and fastness on polyester fibers.

IT 27697-54-7P

(prepn. and azo coupling with substituted aniline derivs.)

RN 27697-54-7 ZCA

CN 2-Benzothiazolamine, 6-(phenylazo)- (9CI) (CA INDEX NAME)



IT 27697-54-7P

(prepn. and azo coupling with substituted aniline derivs.)

L9 ANSWER 11 OF 21 ZCA COPYRIGHT 2005 ACS on STN

83:97108 Synthesis of thiaza heterocycles. Fenech, Giovanna; Basile, Maria; Previtera, Tindara (Ist. Chim. Farm. Tossicol., Univ. Messina, Messina, Italy). Atti della Societa Peloritana di Scienze Fisiche, Matematiche e Naturali, 19(1-2), 53-74 (Italian) 1973. CODEN: ASPSAJ. ISSN: 0037-8860. OTHER SOURCES: CASREACT 83:97108.

GI For diagram(s), see printed CA Issue.

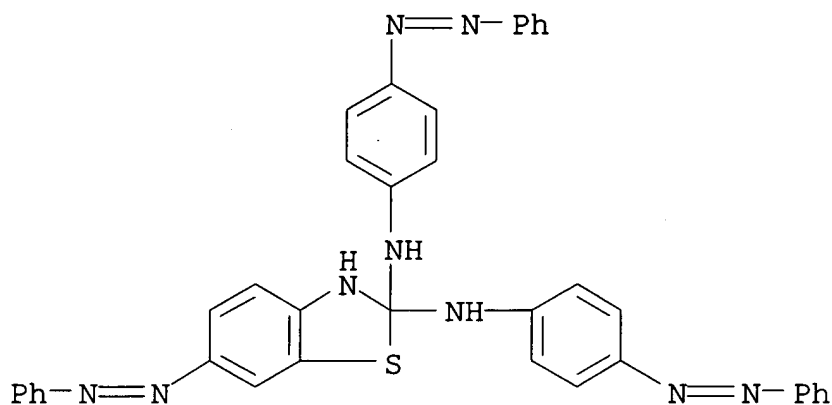
AB The reaction of p-H₂NC₆H₄N:NPh with trioxane and S gave PhN:NC₆H₄R-p (R = NHCHO, NCS, NHAc, N:CH₂), I, and II.

IT 56698-55-6P

(prepn. of)

RN 56698-55-6 ZCA

CN 2,2(3H)-Benzothiazolediamine, 6-(phenylazo)-N,N'-bis[4-(phenylazo)phenyl]- (9CI) (CA INDEX NAME)



IT 56698-55-6P
(prepn. of)

L9 ANSWER 12 OF 21 ZCA COPYRIGHT 2005 ACS on STN
81:120139 Thiocyanation of dianilines. I. Experimental results.
Bouanane, Abdelhakim; Lochon, Pierre; Neel, Jean (Lab. Chim. Phys.
Macromol., Ec. Natl. Super. Ind. Chim., Nancy, Fr.). Bulletin de la
Societe Chimique de France (3-4, Pt. 2), 641-8 (French) 1974.
CODEN: BSCFAS. ISSN: 0037-8968.

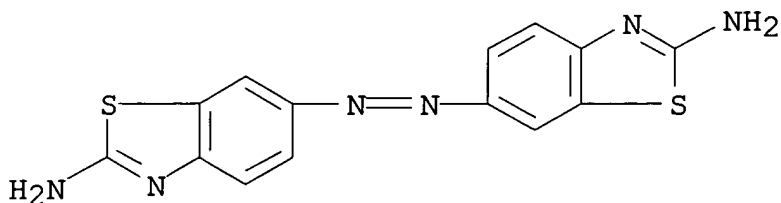
GI For diagram(s), see printed CA Issue.

AB Dianilines (4-H₂NC₆H₄)₂Q were thiocyanated to give
bis-(.omicron.-aminophenyl thiocyanates) (I) and
bis(2-aminobenzothiazoles) (II; Q = SO₂, CO, N:N, S, O, ureylene,
CH₂, CH₂CH₂, CMe₂, cyclohexylidene). Similarly prepd. were
thiocyanates (III; Q = SO₂, CO, O, CH₂, CMe₂), 4,4'-diaminobiphenyl
3,3'-dithiocyanate, and 6,6'-bis(2-aminobenzothiazole).

IT 53357-03-2P
(prepn. of)

RN 53357-03-2 ZCA

CN 2-Benzothiazolamine, 6,6'-azobis- (9CI) (CA INDEX NAME)



IT 53357-03-2P
(prepn. of)

L9 ANSWER 13 OF 21 ZCA COPYRIGHT 2005 ACS on STN

70:68232 Quaternary salts of 2-aminonaphtho[1,2-d]thiazoles.

Pentimalli, Luciano; Greci, Lucedio (Univ. Bologna, Bologna, Italy).
Gazzetta Chimica Italiana, 98(11), 1369-79 (Italian) 1968. CODEN:
GCITA9. ISSN: 0016-5603.

GI For diagram(s), see printed CA Issue.

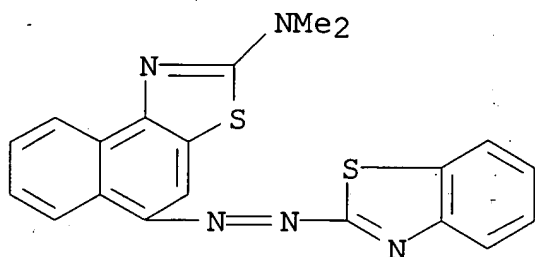
AB Some 2-aminonaphtho[1,2-d]thiazoles were prep'd. and treated with
Me₂SO₄ to give monomethosulfate derivs. on the cyclic N atom.
Quaternary salts of 2-[p-[N,N-bis(2-hydroxyethyl)amino]phenylazo]thi-
azoles were also prep'd. The compds. were characterized from
absorption spectra and the structure of the salts was established by
comparison with 2-phenylazobenzothiazole and 2-
phenylazonaphthothiazole. .alpha.-Naphthothioureia, m. 197.degree.
(10 g.), was dissolved in 45 cc. PhCl and refluxed 5 hrs., kept
60-90 min., and distd. in vacuo to give 8 g. .alpha.-naphthyl
isothiocyanate (I), m. 57-8.degree.. To 8 g. I in 50 cc. EtOH, 15
cc. 30% Me₂NH in EtOH was added slowly, and the mixt. boiled 10 min.
to give 9.2 g. N,N-dimethyl-N'-.alpha.-naphthylthioureia, m.
165.degree.. This in 100 cc. CHCl₃ was treated at 5-10.degree. with
6.5 g. Br in 10 cc. CHCl₃, and the soln. boiled, satd. with SO₂, and
filtered to give II (R = NMe₂), m. 118.degree. refluxed with 3 moles
Me₂SO₄ 30 min. at 95-105.degree. to give the methosulfate, m.
220.degree.. The following II were similarly prep'd. (R, m.p., and
m.p. methosulfate given): NPh, 135.degree., 176-7.degree.; and
morpholino, 93.degree., 136.degree.. II were diazotized and coupled
with a basic naphthothiazole in AcOH with successive addns. of satd.
NaOAc soln. (product, m.p., and m.p. methosulfate given):
2-dimethylamino-5-(benzothiazol-2-ylazo)-naphtho[1,2-d]thiazole,
157, 228.degree.; 2-morpholino-5-(.alpha.-naphthothiazol-2-
ylazo)naphtho[1,2-d]thiazole, 279-81, 240.degree.; and
2-phenylamino-5-(thiazol-2-ylazo)naphtho[1,2-d]thiazole, 150,
217.degree.. A soln. of 1.5 g. 2-aminobenzothiazole (III) in 10 cc.
C₅H₅N was added to 1.1 g. PhNO in 10 cc. C₅H₅N, and the mixt.
stirred with 2 g. KOH 24 hrs. and worked up to give 60%
2-(phenylazo)benzothiazole, m. 142.degree.; methosulfate m.
113.degree.. 2-Phenylazonaphtho[2,1-d]thiazole, m. 157.degree., and
II (R = N:NPh), m. 181.degree., were similarly prep'd. III (1.5 g.)
was diazotized in 15 cc. HCO₂H and 4 cc. 96% H₂SO₄ and coupled with
1.8 g. N-phenyldiethanolamine in AcOH to give 2-[p-[N,N-bis(2-
hydroxyethyl)amino]phenylazo]benzothiazole, m. 200.degree..

IT 21431-46-9P 21431-48-1P 21431-50-5P
22681-31-8P 22681-32-9P 22753-13-5P

(prep'n. of)

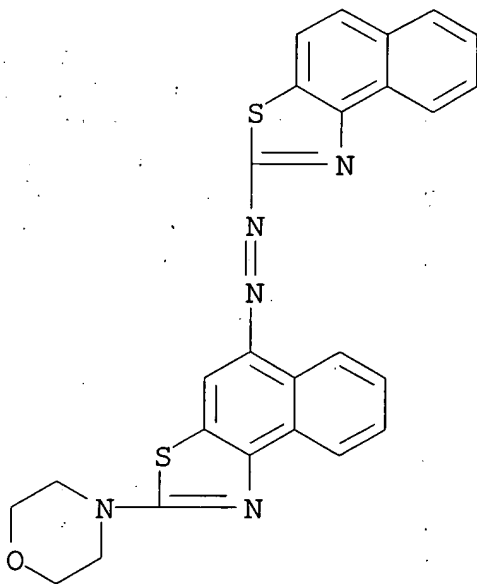
RN 21431-46-9 ZCA

CN Naphtho[1,2-d]thiazole, 5-(2-benzothiazolylazo)-2-(dimethylamino)-
(6CI, 8CI) (CA INDEX NAME)



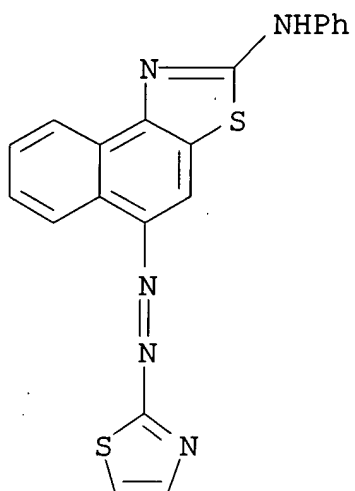
RN 21431-48-1 ZCA

CN Naphtho[1,2-d]thiazole, 2'-morpholino-2,5'-azobis- (6CI, 8CI) (CA INDEX NAME)



RN 21431-50-5 ZCA

CN Naphtho[1,2-d]thiazole, 2-anilino-5-(2-thiazolylazo)- (6CI, 8CI) (CA INDEX NAME)



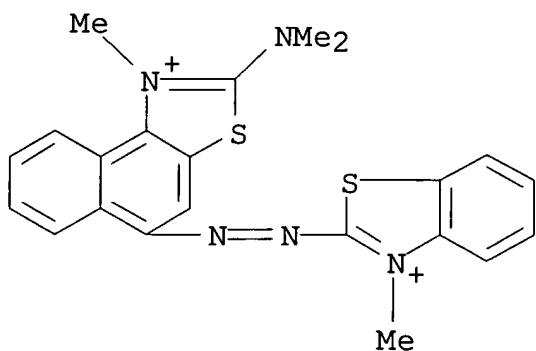
RN 22681-31-8 ZCA

CN Naphtho[1,2-d]thiazolium, 2-(dimethylamino)-1-methyl-5-[(3-methylbenzothiazolium-2-yl)azo]-, bis(methyl sulfate) (8CI) (CA INDEX NAME)

CM 1

CRN 47616-06-8

CMF C22 H21 N5 S2



CM 2

CRN 21228-90-0

CMF C H3 O4 S

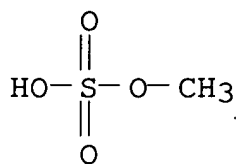
Me-O-SO₃⁻

RN 22681-32-9 ZCA
 CN Thiazolium, 2-[[1,2-dihydro-1-methyl-2-(phenylimino)naphtho[1,2-d]thiazol-5-yl]azo]-3-methyl-, methyl sulfate, mono(methyl sulfate) (9CI) (CA INDEX NAME)

CM 1

CRN 75-93-4

CMF C H4 O4 S



CM 2

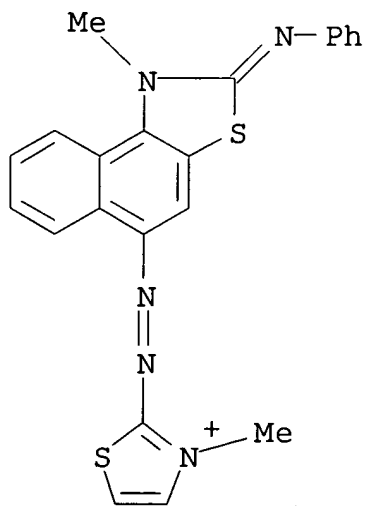
CRN 146076-47-3

CMF C22 H18 N5 S2 . C H3 O4 S

CM 3

CRN 47616-07-9

CMF C22 H18 N5 S2



CM 4

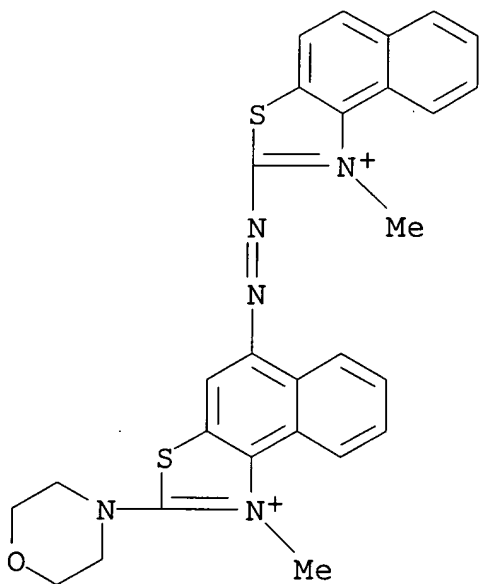
CRN 21228-90-0
CMF C H3 O4 S

Me-O-SO₃⁻

RN 22753-13-5 ZCA
CN Naphtho[1,2-d]thiazolium, 2'-morpholino-2,5'-azobis[1-methyl-,
bis(methyl sulfate) (8CI) (CA INDEX NAME)

CM 1

CRN 47773-03-5
CMF C28 H25 N5 O S2



CM 2

CRN 21228-90-0
CMF C H3 O4 S

Me-O-SO₃⁻

IT 21431-46-9P 21431-48-1P 21431-50-5P
22681-31-8P 22681-32-9P 22753-13-5P
(prepn. of)

L9 ANSWER 14 OF 21 ZCA COPYRIGHT 2005 ACS on STN

53:127939 Original Reference No. 53:22970c-g Metal-containing polyazo coloring matters derived from benzothiazole. Davies, Robert R.; Pearson, Kenneth W. (Imperial Chemical Industries Ltd.). GB 811740 19590408 (Unavailable). APPLICATION: GB .

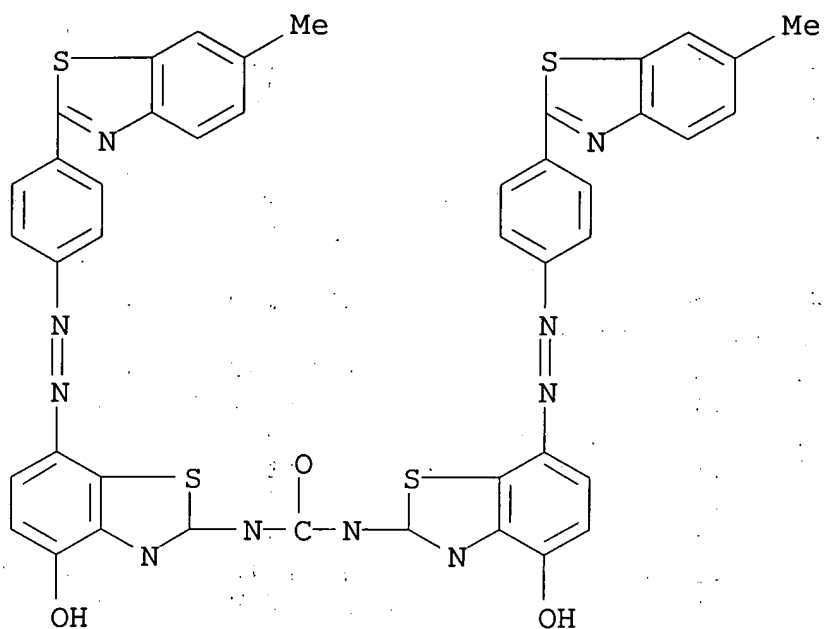
GI For diagram(s), see printed CA Issue.

AB Cu and Ni derivs. of the azo compds. of the formula I were prepd., in which A and-A' are the same or different aromatic radicals, X is a CO, terephthaloyl, fumaroyl, or 2,4-bivalent 1,3,5-triazinyl radical substituted in the 6-position by NH₂ or substituted NH₂, and the benzene ring of the benzothiazole group may be further substituted. 4-Amino-4'-benzamido-stilbene-2,2'-disulfonic acid (II) 4.8, dissolved in water 100 and 2N Na₂CO₃ soln. 10, was diazotized and added below 10.degree. to N,N'-bis(4-hydroxy-2-benzothiazolyl)urea (III) 1.86 in water 25 and 2N aq. NaOH 5 parts, keeping the mixt. alk. to Brilliant Yellow by adding 2N aq. Na₂CO₃ as required. The mixt. was stirred for 8 hrs. at <10.degree. and NaCl added. The ppt. was filtered off, washed with 20%, and drained to give the dye. The latter, dissolved in water 200 and aq. NH₃ (d. 0.88) 4.4, was heated to 70.degree., CuSO₄ 3 in water 20 and aq. NH₃ (d. 0.88) 4.4 parts added, and the mixt. stirred for 30 min. at 70-5.degree. with periodic addns. of aq. NH₃. The ppt. was filtered off, washed with water, and dissolved in boiling water 200 with 2N aq. Na₂CO₃ until the soln. was alk. to Brilliant Yellow. The soln. was filtered, NaCl 10 added to the filtrate, the ppt. filtered off, washed with 5% brine, and dried to give the Cu deriv., orange powder, dyeing cellulose fibers in bright-orange shades of good light- and wash-fastness, and showing no change of shade on crease-resist processing. Dehydrothio-p-toluidine 4.9 parts was diazotized, coupled with III 3.72, the resulting pigment 3.1, mixed with the addn. compd. 14 of Et₃N and SO₃, and heated for 1 hr. at 115-20.degree. to give the dye. The latter, when applied to cellulose fibers by the normal acidic aftercoppering process, gave orange shades of good light- and wash-fastness.

IT 103401-18-9, Urea, 1,3-bis(4-hydroxy-7-(p-6-methyl-2-benzothiazolylphenylazo)-2-benzothiazolyl]- 108247-61-6, 2,2'-Stilbenedisulfonic acid, 4,4''-[ureylenebis[(4-hydroxy-2,7-benzothiazolediyl)azo]]bis[4'-benzamido- 121969-22-0, Urea, 1,3-bis(4-hydroxy-7-(p-6-methyl-2-benzothiazolylphenylazo)-2-benzothiazolyl]-, bis(hydrogen sulfate) (prepn. of)

RN 103401-18-9 ZCA

CN Urea, 1,3-bis[4-hydroxy-7-(p-6-methyl-2-benzothiazolylphenylazo)-2-benzothiazolyl]- (6CI) (CA INDEX NAME)

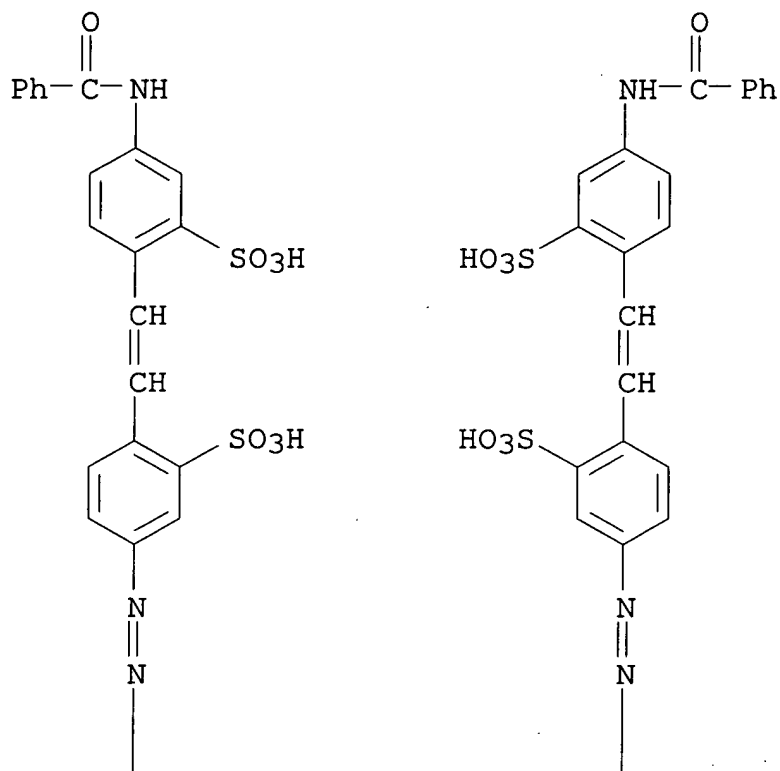


ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

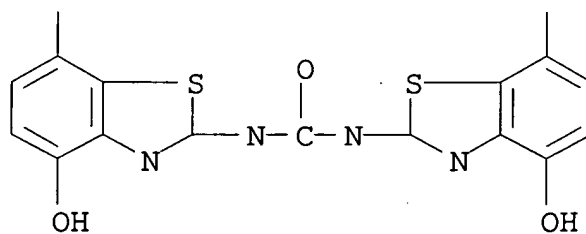
RN 108247-61-6 ZCA

CN 2,2'-Stilbenedisulfonic acid, 4,4''-[ureylenebis[(4-hydroxy-2,7-benzothiazolediyl)azo]]bis[4'-benzamido- (6CI) (CA INDEX NAME)

PAGE 1-A



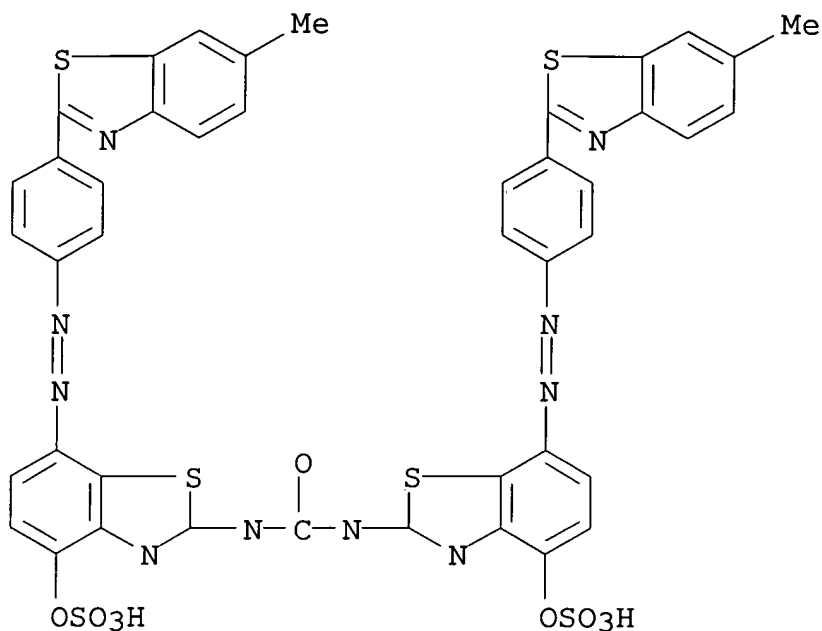
PAGE 2-A



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

RN 121969-22-0 ZCA

CN Urea, 1,3-bis[4-hydroxy-7-(p-6-methyl-2-benzothiazolylphenylazo)-2-benzothiazolyl]-, bis(H sulfate) (6CI) (CA INDEX NAME)



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

IT 103401-18-9, Urea, 1,3-bis(4-hydroxy-7-(p-6-methyl-2-benzothiazolyphenylazo)-2-benzothiazolyl]- 108247-61-6, 2,2'-Stilbenedisulfonic acid, 4,4''-[ureylenebis[(4-hydroxy-2,7-benzothiazolediyl)azo]]bis[4'-benzamido- 121969-22-0, Urea, 1,3-bis(4-hydroxy-7-(p-6-methyl-2-benzothiazolyphenylazo)-2-benzothiazolyl]-, bis(hydrogen sulfate) (prepn. of)

L9 ANSWER 15 OF 21 ZCA COPYRIGHT 2005 ACS on STN

53:42414 Original Reference No. 53:7610c-f Metalizable monoazo dyes of the phenylazo-4-hydroxybenzothiazole series. Legg, Norman (Imperial Chemical Industries Ltd.). GB 801900 19580924 (Unavailable).

APPLICATION: GB .

GI For diagram(s), see printed CA Issue.

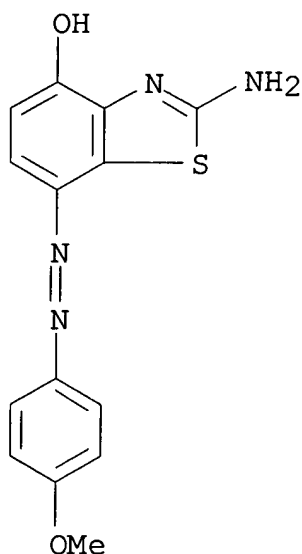
AB Yellow metalizable monoazo dyes of the formula I are suitable for coloring artificial textiles. X is H, halogen, Ph, NH₂, or an acetamido radical, and Y can be substituted. Thus, 1.23 parts 4-anisidine (I) is diazotized and coupled with 1.51 parts 4-hydroxybenzothiazole (II). 4-Aminophenyl 2-hydroxyethyl ether (III) 1.53, can replace I. 2-Chloro-4-hydroxybenzothiazole 1.86 or 2-amino-4-hydroxybenzothiazole 1.66 parts can replace II in the first example. Diazotized III 1.53 is coupled with 2-phenyl-4-hydroxybenzothiazole 2.27 parts. Diazotized PhNH₂ 1.16 is coupled with 2.6 parts 2-acetamido-4-hydroxybenzothiazole. All products give yellow shades when aftercoppered on nylon or cellulose

acetate.

IT 100621-25-8, 4-Benzothiazolol, 2-amino-7-(p-methoxyphenylazo)- 100881-44-5, 4-Benzothiazolol, 2-acetamido-7-phenylazo- 101352-08-3, 4-Benzothiazolol, 2-acetamido-7-(p-methoxyphenylazo)- (prepn. of)

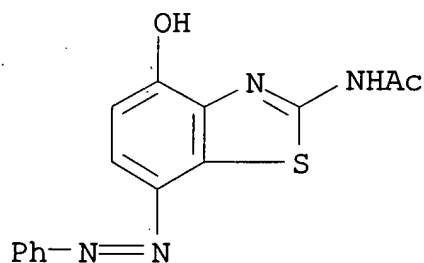
RN 100621-25-8 ZCA

CN 4-Benzothiazolol, 2-amino-7-(p-methoxyphenylazo)- (6CI) (CA INDEX NAME)



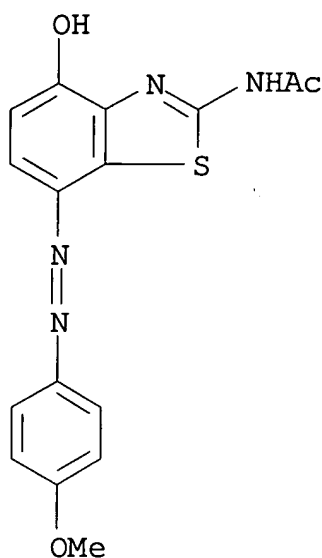
RN 100881-44-5 ZCA

CN 4-Benzothiazolol, 2-acetamido-7-phenylazo- (6CI) (CA INDEX NAME)



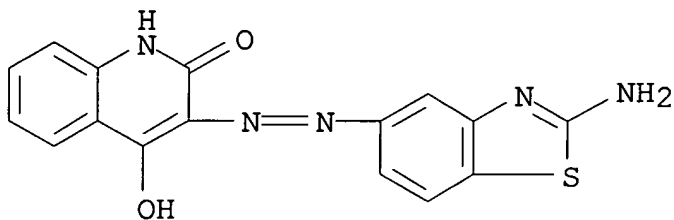
RN 101352-08-3 ZCA

CN 4-Benzothiazolol, 2-acetamido-7-(p-methoxyphenylazo)- (6CI) (CA INDEX NAME)



- IT 100621-25-8, 4-Benzothiazolol, 2-amino-7-(p-methoxyphenylazo)- 100881-44-5, 4-Benzothiazolol, 2-acetamido-7-phenylazo- 101352-08-3, 4-Benzothiazolol, 2-acetamido-7-(p-methoxyphenylazo)- (prepn. of)
- L9 ANSWER 16 OF 21 ZCA COPYRIGHT 2005 ACS on STN 51:37071 Original Reference No. 51:7015e-g Azo dyes derived from 2,4-dihydroxyquinoline. Pentimalli, Luciano (Univ. Bologna, Italy). Chim. e ind. (Milan), 39, 11-14 (Unavailable) 1957.
- AB Coupling of the thiazole nucleus with 2,4-(OH)₂C₉H₅N (I) produces dyes suitable for dispersion dyeing of acetate silk and nylon and for dyeing wool on chrome mordant. Substituted aminothiazoles (II) are diazotized in the usual manner and the coupling agent I is added in soln. with the calcd. amt. of NaOH. Na₂CO₃ is used to maintain alkalinity during coupling and to avoid the decompn. of the ArN: N-compd. with a stronger alkali. Dyes with the structure 2,4,3-(OH)₂(ArN:N)C₉H₄N were prepd. by coupling I with the following II (Ar groups) (II, m.p. of II, cryst. from of II, solvent, and color of II given): 2-aminothiazole (III) 145.degree., needles from AcOH, brown; 2-aminobenzothiazole (IV) 243.degree., prisms from AcOH, red-brown; 6-NO₂-IV 125.degree., prisms from AcOH, red-brown; 6-Me-IV 175.degree., prisms from AcOH, orange-brown; 6-MeO-IV 250.degree., needles from C₅H₅N, red-purple; 6-Br-IV 120.degree., prisms from AcOH, orange; 2-phenyl-6-aminobenzothiazole 143.degree., needles from AcOH, orange; 2,5-diaminobenzothiazole 300.degree., needles from C₅H₅N, red-purple; 2-amino-.alpha.-naphthothiazole 214.degree., prisms from C₅H₅N, red-brown; 2-amino-.beta.-

IT naphthothiazole 250.degree., needles from C5H5N, red-purple.
 IT 107625-78-5, 2,4-Quinolinediol, 3-(2-amino-5-benzothiazolylazo)-
 (prepn. of)
 RN 107625-78-5 ZCA
 CN 2,4-Quinolinediol, 3-(2-amino-5-benzothiazolylazo)- (6CI) (CA INDEX NAME)



IT 107625-78-5, 2,4-Quinolinediol, 3-(2-amino-5-benzothiazolylazo)-
 (prepn. of)

L9 ANSWER 17 OF 21 ZCA COPYRIGHT 2005 ACS on STN
 51:37070 Original Reference No. 51:7013i,7014i,7015a-e Dispersed
 thiazole azo dyes. Pentimalli, Luciano (Univ. Bologna, Italy).
 Chimica e l'Industria (Milan, Italy), 39, 7-11 (Unavailable) 1957.
 CODEN: CINMAB. ISSN: 0009-4315.
 AB Several new thiazole azo compds. are described which are suitable as
 dispersion dyes for synthetic fibers. The dyes were made by
 diazotization of p-NO₂C₆H₄NH₂ (I), 2,4-(NO₂)₂C₆H₃NH₂ (II),
 2-aminothiazole (III), 2-aminobenzothiazole (IV),
 2-amino-.alpha.-naphthothiazole (V), and 2-amino-.beta.-
 naphthothiazole (VI), followed by coupling in HCl or AcOH soln. with
 various N-substituted 2-amino-.beta.-naphthothiazoles. The latter
 were synthesized by prolonged heating of 1-C₁₀H₇NHCSNH₂ in PhCl
 giving 1-C₁₀H₇NCS (VII). The technique of Kaye and Parris (C.A. 46,
 9094b) was employed in the addn. of the appropriate amines to VII,
 and cyclization was effected with Br in CHCl₃ giving the following
 coupling agents: 2-dimethylamino- (VIII), 2-anilino- (IX),
 2-morpholino- (X), and 2-[bis (2-hydroxyethyl)amino]-.beta.-
 naphthothiazole (XI). In addn. to the preceding, PhN(CH₂CH₂OH)₂
 (XII) was also used as a coupling agent. Following are the
 characteristics of the intermediates and the coupling agents (m.p.,
 cryst. form, and solvent given): 1-C₁₀H₇NHCSN(Me)₂ 165.degree.,
 needles from petr. ether; VIII 118.degree., prisms from alc.;
 1-C₁₀H₇NHCSNPh 161.degree., plates from petr. ether; IX
 135.degree., plates from petr. ether; 1-C₁₀H₇NHCSN(CH₂CH₂)₂O
 163.degree., prisms from alc.; X 101.degree., needles from petr.
 ether; 1-C₁₀H₇NHCSN(CH₂CH₂OH)₂ 152.degree., needles from alc.; XI

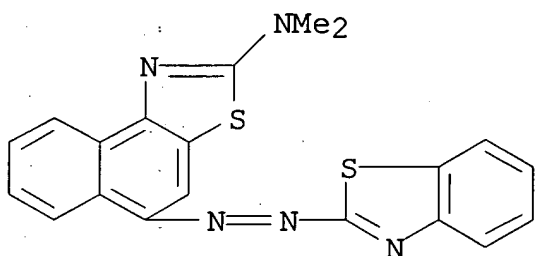
picrate 167.degree., prisms from alc. The dyes and their properties are (diazotized base-coupling agent, m.p. of dye, cryst. form, solvent, and color given): II-IX, 260.degree., prisms, C₅H₅N, purple; III-IX, 150.degree., prisms, C₅H₅N, purple; IV-IX, 272.degree., prisms, C₅H₅N, purple; V-IX, 300.degree., plates, C₅H₅N, purple; VI-IX, 280.degree., needles, petr. ether, purple; I-X, 270.degree., plates, petr. ether, red-purple; II-X, 256.degree., plates, petr. ether, purple; III-X, 202.degree., prisms, petr. ether, red; IV-X, 231.degree., needles, petr. ether, purple; V-X, 263.degree., prisms, C₅H₅N, purple; VI-X, 263.degree., prisms, C₅H₅N, purple; I-XI, 185.degree., prisms, C₅H₅N, red-purple; III-XI, >300.degree., prisms, alc., purple; IV-XI, >300.degree., prisms, alc., purple; V-XI, 200.degree., plates, alc., violet; VI-XI, 183.degree., needles, alc., purple; I-VIII, 120.degree., needles, alc., red-brown; III-VIII, 204.degree., needles, alc., purple; IV-VIII, 157.degree., needles, C₅H₅N, red-purple; V-VIII 273.degree., plates, C₅H₅N, violet; VI-VIII 263.degree., prisms, C₅H₅N, purple; III-XII 172.degree., plates, alc., red-brown; IV-XII 200.degree., prisms, alc., violet; V-XII 206.degree., prisms, alc., red-brown; VI-XII 203.degree., needles, alc., violet; The dyes are water-insol. compds. and those resulting from the coupling of VIII and XII are alc. sol., while those from IX, X, and XI are insol. in hot and cold alc. Preliminary tests indicate that the dyes possess affinity and fastness to wet treatments and fastness to light.

IT 21431-46-9, Naphtho[1,2-d]thiazole, 5-(2-benzothiazolylazo)-2-dimethylamino- 21431-48-1, Naphtho[1,2-d]thiazole, 2'-morpholino-2,5'-azobis- 21431-50-5, Naphtho[1,2-d]thiazole, 2-anilino-5-(2-thiazolylazo)- 109513-70-4, Ethanol, 2,2'-[5-(2-thiazolylazo)naphtho[1,2-d]thiazol-2-ylimino]di- 109723-22-0, Naphtho[1,2-d]thiazole, 2-morpholino-5-(2-thiazolylazo)- 109818-13-5, Naphtho[1,2-d]thiazole, 2-dimethylamino-5-(p-nitrophenylazo)- 112223-60-6, Naphtho[1,2-d]thiazole, 2-morpholino-5-(p-nitrophenylazo)- 112866-12-3, Naphtho[1,2-d]thiazole, 5-(2-benzothiazolylazo)-2-morpholino- 113037-27-7, Naphtho[1,2-d]thiazole, 5-(2,4-dinitrophenylazo)-2-morpholino- 114947-16-9, Naphtho[1,2-d]thiazole, 2-anilino-5-(2,4-dinitrophenylazo)- 115003-52-6, Ethanol, 2,2'-[5-(2-benzothiazolylazo)naphtho[1,2-d]thiazol-2-ylimino]di- 115985-21-2, Naphtho[1,2-d]thiazole, 2'-dimethylamino-2,5'-azobis- 115985-22-3, Naphtho[1,2-d]thiazole, 2-dimethylamino-5-naphtho[2,1-d]thiazol-2-ylazo- 120233-62-7, Naphtho[1,2-d]thiazole, 2-anilino-5-(2-benzothiazolylazo)- 124121-81-9, Naphtho[1,2-d]thiazole, 2'-anilino-2,5'-azobis- 124121-82-0, Naphtho[1,2-d]thiazole, 2-anilino-5-naphtho[2,1-d]thiazol-2-ylazo- 124143-10-8, Naphtho[1,2-d]thiazole, 2-morpholino-5-naphtho[2,1-d]thiazol-2-ylazo- 124180-38-7, Ethanol, 2,2'-(5-naphtho[2,1-d]thiazol-2-ylazonaphtho[1,2-d]thiazol-

2-yl]imino)di- **124180-39-8**, Ethanol, 2,2'-(5-naphtho[1,2-d]thiazol-2-ylazonaphtho[1,2-d]thiazol-2-ylimino)di-
130862-27-0, Naphtho[1,2-d]thiazole, 2-dimethylamino-5-(2-thiazolylazo)-
 (prepn. of)

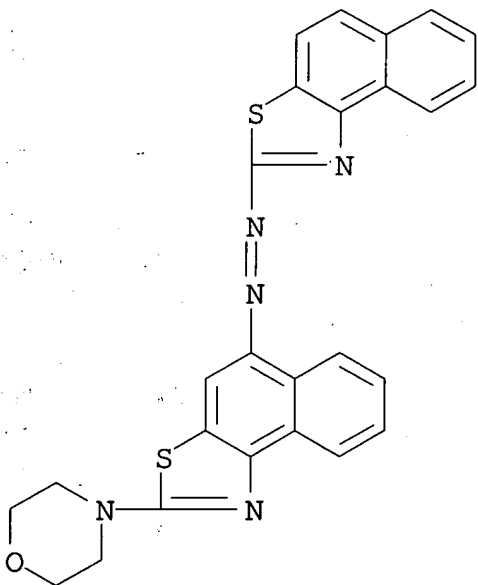
RN 21431-46-9 ZCA

CN Naphtho[1,2-d]thiazole, 5-(2-benzothiazolylazo)-2-(dimethylamino)-
 (6CI, 8CI) (CA INDEX NAME)



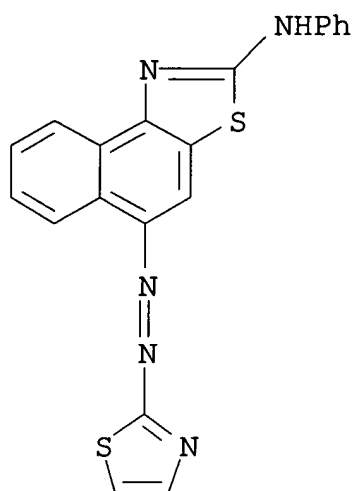
RN 21431-48-1 ZCA

CN Naphtho[1,2-d]thiazole, 2'-morpholino-2,5'-azobis- (6CI, 8CI) (CA INDEX NAME)

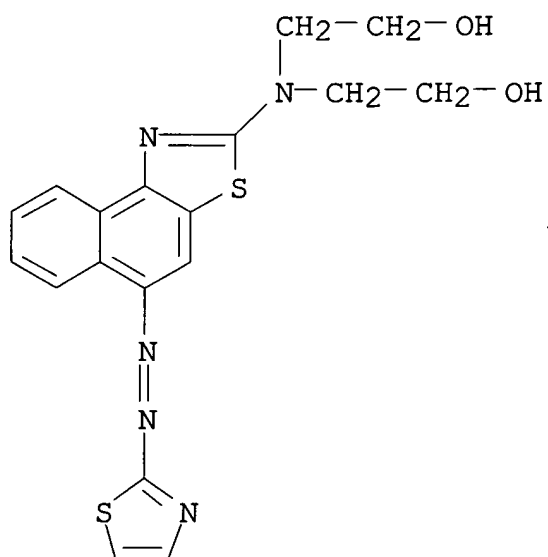


RN 21431-50-5 ZCA

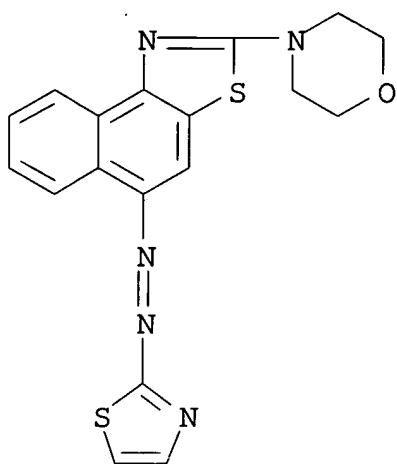
CN Naphtho[1,2-d]thiazole, 2-anilino-5-(2-thiazolylazo)- (6CI, 8CI)
 (CA INDEX NAME)



RN 109513-70-4 ZCA
 CN Ethanol, 2,2'-[5-(2-thiazolylazo)naphtho[1,2-d]thiazol-2-ylimino]di-
 (6CI) (CA INDEX NAME)

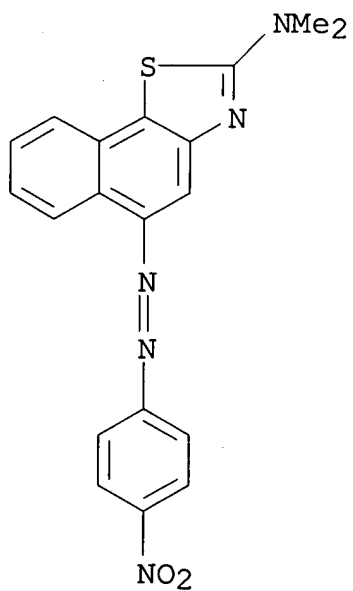


RN 109723-22-0 ZCA
 CN Naphtho[1,2-d]thiazole, 2-morpholino-5-(2-thiazolylazo)- (6CI) (CA
 INDEX NAME)



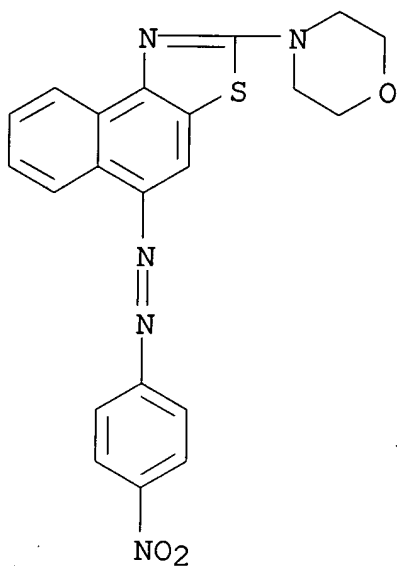
RN 109818-13-5 ZCA

CN Naphtho[1,2-d]thiazole, 2-dimethylamino-5-(p-nitrophenylazo)- (6CI)
(CA INDEX NAME)

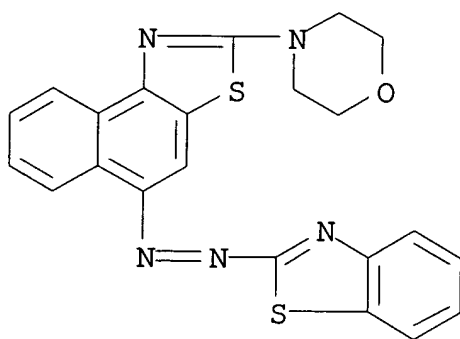


RN 112223-60-6 ZCA

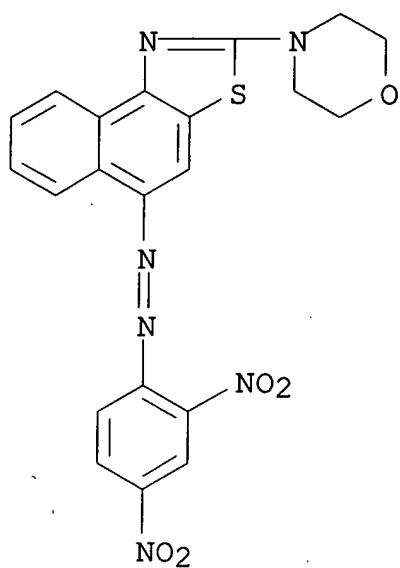
CN Naphtho[1,2-d]thiazole, 2-morpholino-5-(p-nitrophenylazo)- (6CI)
(CA INDEX NAME)



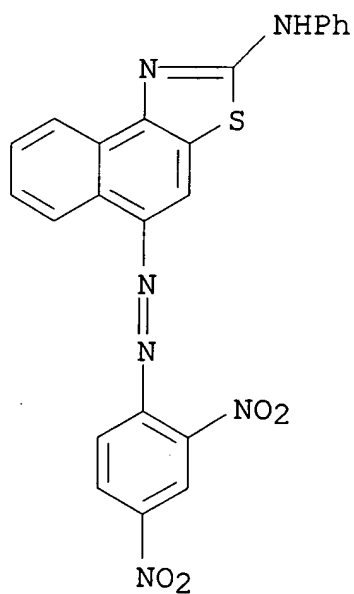
RN 112866-12-3 ZCA
 CN Naphtho[1,2-d]thiazole, 5-(2-benzothiazolylazo)-2-morpholino- (6CI)
 (CA INDEX NAME)



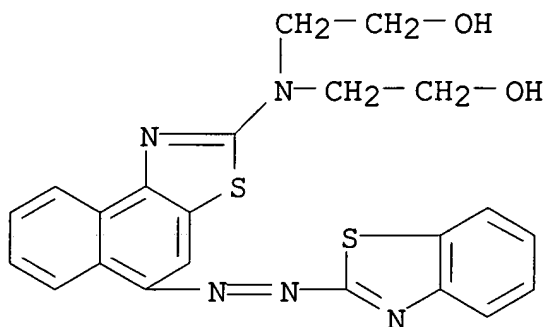
RN 113037-27-7 ZCA
 CN Naphtho[1,2-d]thiazole, 5-(2,4-dinitrophenylazo)-2-morpholino- (6CI)
 (CA INDEX NAME)



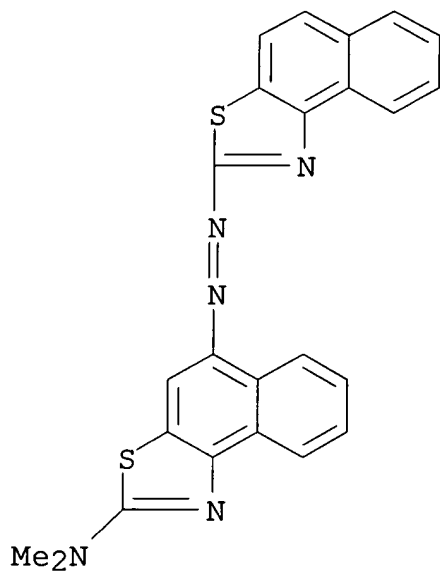
RN 114947-16-9 ZCA
 CN Naphtho[1,2-d]thiazole, 2-anilino-5-(2,4-dinitrophenylazo)- (6CI)
 (CA INDEX NAME)



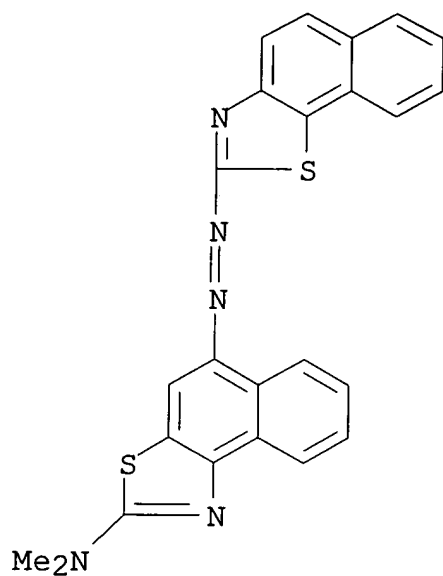
RN 115003-52-6 ZCA
 CN Ethanol, 2,2'-[5-(2-benzothiazolylazo)naphtho[1,2-d]thiazol-2-ylimino]di- (6CI) (CA INDEX NAME)



RN 115985-21-2 ZCA
 CN Naphtho[1,2-d]thiazole, 2'-dimethylamino-2,5'-azobis- (6CI) (CA INDEX NAME)

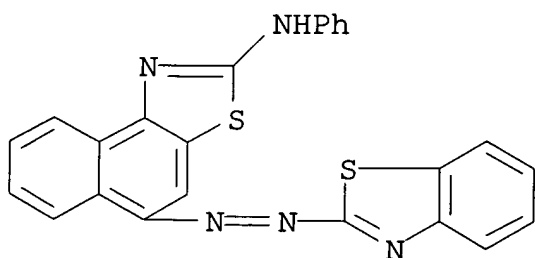


RN 115985-22-3 ZCA
 CN Naphtho[1,2-d]thiazole, 2-dimethylamino-5-naphtho[2,1-d]thiazol-2-ylazo- (6CI) (CA INDEX NAME)



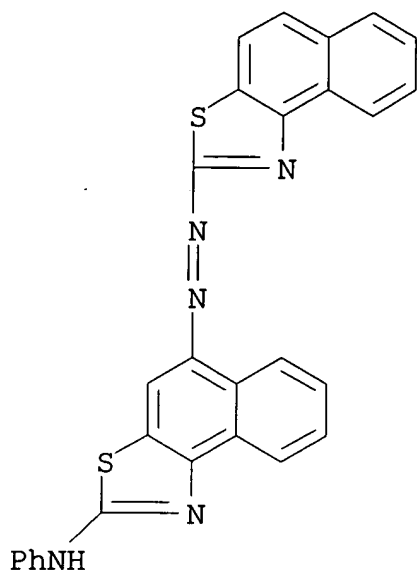
RN 120233-62-7 ZCA

CN Naphtho[1,2-d]thiazole, 2-anilino-5-(2-benzothiazolylazo)- (6CI)
(CA INDEX NAME)

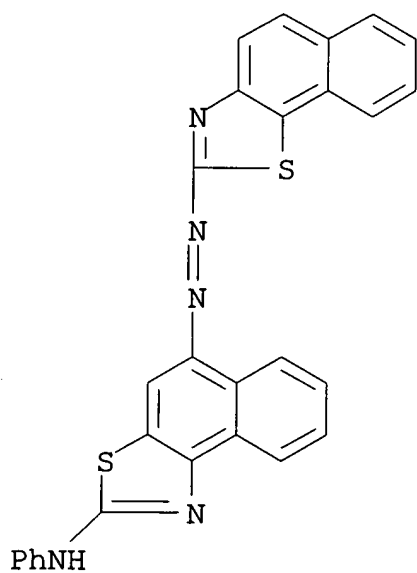


RN 124121-81-9 ZCA

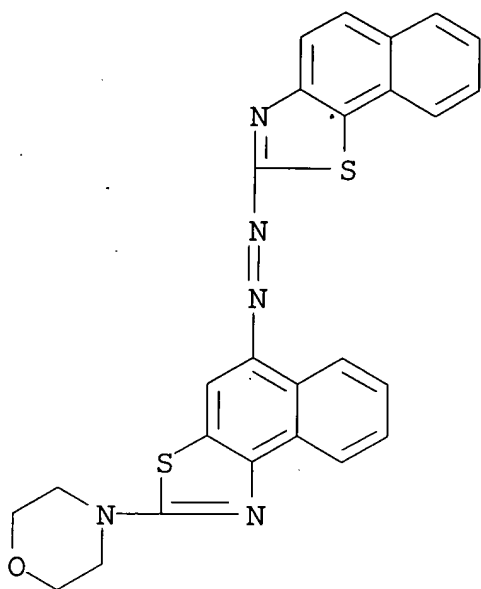
CN Naphtho[1,2-d]thiazole, 2'-anilino-2,5'-azobis- (6CI) (CA INDEX
NAME)



RN 124121-82-0 ZCA
 CN Naphtho[1,2-d]thiazole, 2-anilino-5-naphtho[2,1-d]thiazol-2-ylazo-
 (6CI) (CA INDEX NAME)

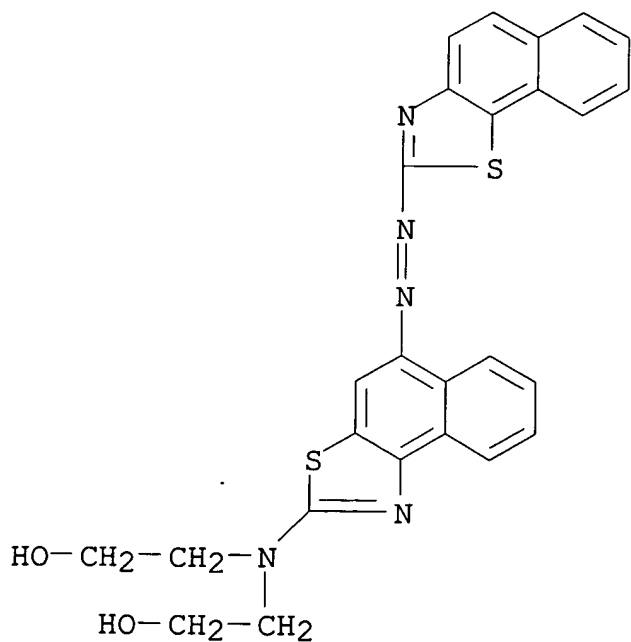


RN 124143-10-8 ZCA
 CN Naphtho[1,2-d]thiazole, 2-morpholino-5-naphtho[2,1-d]thiazol-2-ylazo-
 (6CI) (CA INDEX NAME)



RN 124180-38-7 ZCA

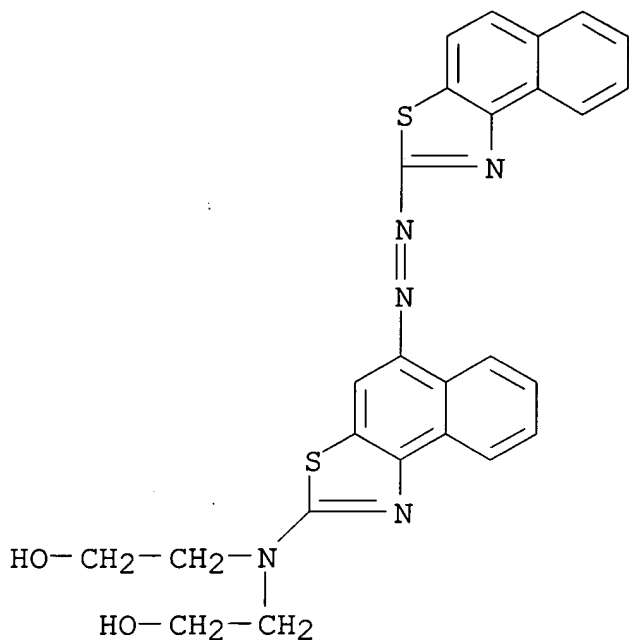
CN Ethanol, 2,2'-(5-naphtho[2,1-d]thiazol-2-ylazonaphtho[1,2-d]thiazol-2-ylimino)di- (6CI) (CA INDEX NAME)



RN 124180-39-8 ZCA

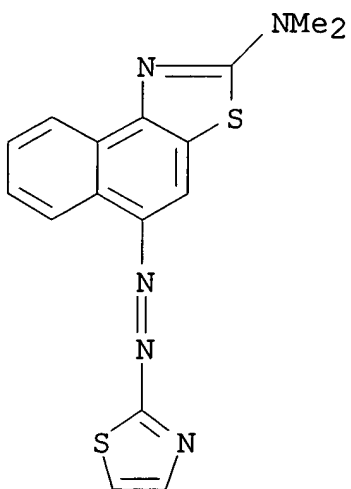
CN Ethanol, 2,2'-(5-naphtho[1,2-d]thiazol-2-ylazonaphtho[1,2-d]thiazol-

2-ylimino)di- (6CI) (CA INDEX NAME)



RN 130862-27-0 ZCA

CN Naphtho[1,2-d]thiazole, 2-dimethylamino-5-(2-thiazolylazo)- (6CI)
(CA INDEX NAME)



IT 21431-46-9, Naphtho[1,2-d]thiazole, 5-(2-benzothiazolylazo)-
2-dimethylamino- 21431-48-1, Naphtho[1,2-d]thiazole,
2'-morpholino-2,5'-azobis- 21431-50-5,
Naphtho[1,2-d]thiazole, 2-anilino-5-(2-thiazolylazo)-

109513-70-4, Ethanol, 2,2'-[5-(2-thiazolylazo)naphtho[1,2-d]thiazol-2-ylimino]di- 109723-22-0, Naphtho[1,2-d]thiazole, 2-morpholino-5-(2-thiazolylazo)- 109818-13-5, Naphtho[1,2-d]thiazole, 2-dimethylamino-5-(p-nitrophenylazo)- 112223-60-6, Naphtho[1,2-d]thiazole, 2-morpholino-5-(p-nitrophenylazo)- 112866-12-3, Naphtho[1,2-d]thiazole, 5-(2-benzothiazolylazo)-2-morpholino- 113037-27-7, Naphtho[1,2-d]thiazole, 5-(2,4-dinitrophenylazo)-2-morpholino- 114947-16-9, Naphtho[1,2-d]thiazole, 2-anilino-5-(2,4-dinitrophenylazo)- 115003-52-6, Ethanol, 2,2'-[5-(2-benzothiazolylazo)naphtho[1,2-d]thiazol-2-ylimino]di- 115985-21-2, Naphtho[1,2-d]thiazole, 2'-dimethylamino-2,5'-azobis- 115985-22-3, Naphtho[1,2-d]thiazole, 2-dimethylamino-5-naphtho[2,1-d]thiazol-2-ylazo- 120233-62-7, Naphtho[1,2-d]thiazole, 2-anilino-5-(2-benzothiazolylazo)- 124121-81-9, Naphtho[1,2-d]thiazole, 2'-anilino-2,5'-azobis- 124121-82-0, Naphtho[1,2-d]thiazole, 2-anilino-5-naphtho[2,1-d]thiazol-2-ylazo- 124143-10-8, Naphtho[1,2-d]thiazole, 2-morpholino-5-naphtho[2,1-d]thiazol-2-ylazo- 124180-38-7, Ethanol, 2,2'-(5-naphtho[2,1-d]thiazol-2-ylazonaphtho[1,2-d]thiazol-2-yl]imino)di- 124180-39-8, Ethanol, 2,2'-(5-naphtho[1,2-d]thiazol-2-ylazonaphtho[1,2-d]thiazol-2-ylimino)di- 130862-27-0, Naphtho[1,2-d]thiazole, 2-dimethylamino-5-(2-thiazolylazo)-
(prepn. of)

L9 ANSWER 18 OF 21 ZCA COPYRIGHT 2005 ACS on STN

50:4686 Original Reference No. 50:962d-g Diazo coupling of 2-aminonaphtho[1,2]thiazole. Passerini, Riccardo; Pentimalli, Luciano (Univ. Bologna). Bollettino Scientifico della Facolta di Chimica Industriale di Bologna, 12, 106-9 (Unavailable) 1954. CODEN: BSFCAY. ISSN: 0366-3205.

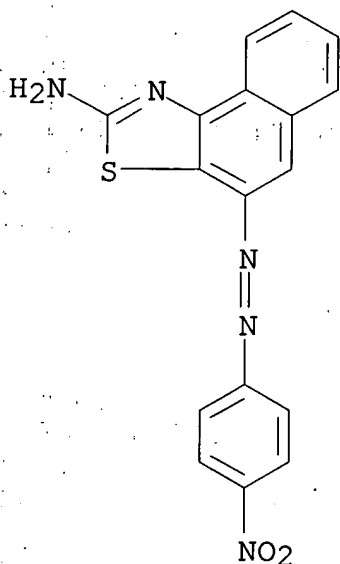
AB 2-Aminonaphtho[1,2]thiazole (I) is best diazotized at -5 to 0.degree.. When I is diazotized at 5-10.degree. the product is a mixt. of I and 2-amino-5-(2-naphtho[1,2]thiazolyl)naphtho[1,2]thiazole (II), which on extn. with boiling dil. HCl yields II, m. 294.degree.. PhNH₂ (0.95 g.) diazotized, the soln. neutralized with carbonate and NaOAc, and coupled with 2 g. I in 30 cc. AcOH yielded XN:NR (X = 2-amino-5-naphtho[1,2]thiazolyl) III (R = Ph), m. 330.degree.. p-BrC₆H₄NH₂ (1.7 g.) diazotized, the soln. neutralized, and coupled with 2 g. I yielded III (R = p-BrC₆H₄), m. 256.degree.. Similarly, 1.4 g. p-O₂NC₆H₄NH₂ yielded III (R = p-O₂NC₆H₄), m. 299-300.degree.. 2,4-(O₂N)₂C₆H₃NH₂ (18 g.) diazotized with metabisulfite and fuming HNO₃ (Witt, C.A. 3, 2942) the soln. neutralized with carbonate and NaOAc, and treated with 2 g. I in AcOH yielded III (R = 2,4-(O₂N)₂C₆H₃), m. 301.degree.. 4,1-O₂NC₁₀H₆NH₂ (5 g.) in 300 cc. AcOH treated with 11 g. KSCN in 30 cc. AcOH, the soln. cooled, 2 g. Br in 30 cc. AcOH added during 15

min. (the temp. kept at 5-10.degree.), the mixt. stirred 1 hr., poured into water, and neutralized with NH₄OH yielded 2-amino-5-nitronaphtho[1,2]thiazole (IV), m. 304.degree.. IV (5 g.) in 20 cc. HCl treated during 1 hr. with 8 g. granulated Sn, the mixt. refluxed 2 hrs., cooled, filtered, and treated with KOH yielded 2,5-diaminonaphtho[1,2]thiazole (V), m. 305-6.degree.; diacetate, m. above 340.degree.. Similar reduction of III (R = p-O₂NC₆H₄) yielded V, m. 306.degree..

IT 670228-28-1, Naphtho[1,2-d]thiazole, 2-amino-5-(p-nitrophenylazo)-
(prepn. of)

RN 670228-28-1 ZCA

CN Naphtho[1,2-d]thiazol-2-amine, 4-[(4-nitrophenyl)azo]- (9CI) (CA
INDEX NAME)



IT 670228-28-1, Naphtho[1,2-d]thiazole, 2-amino-5-(p-nitrophenylazo)-
(prepn. of)

L9 ANSWER 19 OF 21 ZCA COPYRIGHT 2005 ACS on STN

50:4685 Original Reference No. 50:962d-g Diazo coupling of 2-aminonaphtho[1,2]thiazole. Passerini, Riccardo; Pentimalli, Luciano (Univ. Bologna). Gazzetta Chimica Italiana, 85, 744-9 (Unavailable) 1955. CODEN: GCITA9. ISSN: 0016-5603.

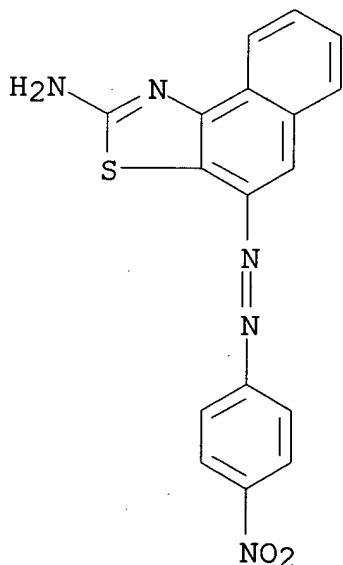
AB 2-Aminonaphtho[1,2]thiazole (I) is best diazotized at -5 to 0.degree.. When I is diazotized at 5-10.degree. the product is a mixt. of I and 2-amino-5-(2-naphtho[1,2]thiazolyl)naphtho[1,2]thiazole (II), which on extn. with boiling dil. HCl yields II, m. 294.degree.. PhNH₂ (0.95 g.) diazotized, the soln. neutralized with

carbonate and NaOAc, and coupled with 2 g. I in 30 cc. AcOH yielded XN:NR (X = 2-amino-5-naphtho[1,2]thiazolyl) III (R = Ph), m. 330.degree.. p-BrC₆H₄NH₂ (1.7 g.) diazotized, the soln. neutralized, and coupled with 2 g. I yielded III (R = p-BrC₆H₄), m. 256.degree.. Similarly, 1.4 g. p-O₂NC₆H₄NH₂ yielded III (R = p-O₂NC₆H₄), m. 299-300.degree.. 2,4-(O₂N)₂C₆H₃NH₂ (18 g.) diazotized with metabisulfite and fuming HNO₃ (Witt, C.A. 3, 2942) the soln. neutralized with carbonate and NaOAc, and treated with 2 g. I in AcOH yielded III (R = 2,4-(O₂N)₂C₆H₃), m. 301.degree.. 4,1-O₂NC₁₀H₆NH₂ (5 g.) in 300 cc. AcOH treated with 11 g. KSCN in 30 cc. AcOH, the soln. cooled, 2 g. Br in 30 cc. AcOH added during 15 min. (the temp. kept at 5-10.degree.), the mixt. stirred 1 hr., poured into water, and neutralized with NH₄OH yielded 2-amino-5-nitronaphtho[1,2]thiazole (IV), m. 304.degree.. IV (5 g.) in 20 cc. HCl treated during 1 hr. with 8 g. granulated Sn, the mixt. refluxed 2 hrs., cooled, filtered, and treated with KOH yielded 2,5-diaminonaphtho[1,2]thiazole (V), m. 305-6.degree.; diacetate, m. above 340.degree.. Similar reduction of III (R = p-O₂NC₆H₄) yielded V, m. 306.degree..

IT 670228-28-1, Naphtho[1,2-d]thiazole, 2-amino-5-(p-nitrophenylazo)-
(prepn. of)

RN 670228-28-1 ZCA

CN Naphtho[1,2-d]thiazol-2-amine, 4-[(4-nitrophenyl)azo]- (9CI) (CA INDEX NAME)



IT 670228-28-1, Naphtho[1,2-d]thiazole, 2-amino-5-(p-nitrophenylazo)-
(prepn. of)

L9 ANSWER 20 OF 21 ZCA COPYRIGHT 2005 ACS on STN

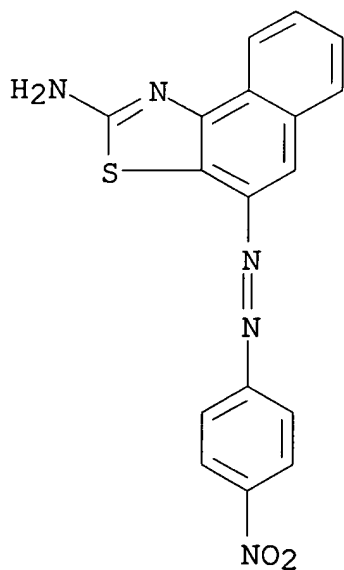
50:1465 Original Reference No. 50:305f-h Diazo coupling with 2-aminonaphthoxazole. Passerini, R.; Pentimalli, L. (Univ. Bologna, Italy). Bol. sci. fac. chim. ind. (Bologna), 12, 165 (Unavailable) 1954.

AB The absorption spectra of 5-(p-nitrophenylazo)-2-aminonaphth[1.2]oxazole (I) are almost identical with the corresponding 2-aminonaphtho[1.2]thiazole deriv., λ_{max} . 475, $\log \epsilon$. 4.31. I has good coloring affinity for cellulose acetate and nylon. 2-Hydroxy-1-naphthylthiourea, 10 g. obtained from the reaction of 1,2-H₂NC₁₀H₆OH and KCNS, dissolved in 200 cc. EtOH was heated with 20-25 g. HgO for 28 h., filtered, evapd. to dryness, extd. with 50 cc. 10% NaOH at 70-80.degree. followed by filtration, washing with H₂O, drying and extn. with 180 cc. C₆H₆ gave 2-aminonaphth[1.2]oxazole (II), m. 199.degree.. A soln. of p-O₂NC₆H₄N₂Cl buffered with AcONa was added to 1.8 g. II in 30 cc. AcOH and stirred for 30 min. and the soln. was allowed to stand 12 h., poured into H₂O, filtered and treated with boiling EtOH to give I, m. 304.degree. (decompn.) (from C₅H₅N).

IT 670228-28-1, Naphtho[1,2-d]thiazole, 2-amino-5-(p-nitrophenylazo)-
(spectrum of)

RN 670228-28-1 ZCA

CN Naphtho[1,2-d]thiazol-2-amine, 4-[(4-nitrophenyl)azo]- (9CI) (CA INDEX NAME)



IT 670228-28-1, Naphtho[1,2-d]thiazole, 2-amino-5-(p-nitrophenylazo)-

(spectrum of)

L9 ANSWER 21 OF 21 ZCA COPYRIGHT 2005 ACS on STN

49:41176 Original Reference No. 49:7855d-g Azo derivatives of 2-amino-.beta.-naphthothiazole. Passerini, R.; Pentimalli, L. (Univ. Bologna, Italy). Bollettino Scientifico della Facolta di Chimica Industriale di Bologna, 12, 110-13 (Unavailable) 1954. CODEN: BSFCAY. ISSN: 0366-3205.

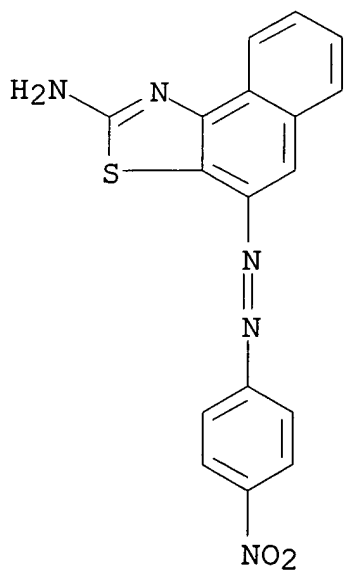
GI For diagram(s), see printed CA Issue.

AB Azo dyes (I) were prepd. by using 2-amino-.beta.-naphthothiazole as coupler. Their fiber affinity was studied. I were prepd. where Ar was 2-thiazolyl (m. above 330.degree. from C5H6N), phenyl, p-nitrophenyl, 2,4-dinitrophenyl, p-bromophenyl, 2-benzothiazolyl (decomp. 285.degree.), 4-methyl-2-benzothiazolyl (decomp. 310.degree.), 6-methoxy-2-benzothiazolyl (decomp. 296.degree.), and 6-bromo-2-benzothiazolyl (decomp. 300.degree.). Affinity and fastness properties of I for nylon were greater than for acetate rayon. Introduction of a second thiazole nucleus did not essentially vary any dye properties. A table is given of fastness to light, sweat, and washing of all azo dyes prepd.

IT 670228-28-1, Naphtho[1,2-d]thiazole, 2-amino-5-(p-nitrophenylazo)-
(prepn. of)

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IT 670228-28-1, Naphtho[1,2-d]thiazole, 2-amino-5-(p-nitrophenylazo)-